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## OLD AGE AND DEATH.

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*Biological.* From the most general point of view it must be admitted that senescence is a constant accompaniment of development. The evolution of both the race and the individual is as much concerned with the effective dismissal of old and ante-dated organs as with the production of new ones.<sup>1</sup> Minot<sup>2</sup> indeed regards the whole course of individual life from the moment of the union of the two reproductive cells as a gradual decay, and has attempted by elaborate weighings to prove that during the minority or period of growth of guinea pigs, the actual vital force diminishes steadily. At the same time we must not lose sight of the fact that senescing cells, such as glandular products and organs like the gill-slits, etc., of the vertebrata, exercise a stimulating influence upon the organs which remain or take their place. Their force is passed on rather than lost, and while decay is undoubtedly a constant and necessary factor in all vital manifestations, and whatever may be true of the ultimate "vital force," it must be admitted that the functions of life as they may be observed in any specialized organism, increase for a time in strength, range, and complexity, pass through a period of comparative poise, and finally break up and disappear. These three natural periods, however further they may be divided (Cf. Flourens, *e. g.*) are emphatically punctuated by the advent and decline of the sexual and reproductive functions, which may thus be regarded as crowning the physiological development of the individual.

In many species, however, as Weissmann, Goette, Geddes and others have pointed out, the closing stage is wanting. There is no gradual senescence, but death

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<sup>1</sup>The ability to forget, *e. g.*, is as important to psychic health as the capacity to acquire. Cf. paragraph on the funeral.

<sup>2</sup>*Jour. Phys.*, May, '91, and *Biologisches Centralblatt*, XV, No. 15.

follows immediately upon the completion of the reproductive functions. Weissmann regards this as due entirely to external conditions operating upon the individual through natural selection, and tries to show that death is a favorable adaptation to get rid of senility, which he thus accepts as fundamental and due to a "wearing out." Goette<sup>1</sup> on the other hand regards death as the fundamental fact, a necessity inherent in life itself, an unavoidable consequence of reproduction, and represented in the protozoa by encystment and rejuvenation.<sup>2</sup> Death must, he says, have become necessary and hereditary in a number of individuals before it could possibly become useful and thus operated upon by natural selection.<sup>3</sup> Senility he regards as having been "acquired in the course of development of the race."<sup>4</sup>

But it is impossible to separate, as Weissmann does completely and Goette to a less extent, the individual and its environment. A view which combines the internal physiological causes of Goette and the external, natural selection, or teleological causes of Weissmann as both necessary and complementary to each other, is the only one which can have any application to organisms as they at present exist. The point of fundamental importance brought out by both Goette and Weissmann is that death and senility are ultimately functions of the species, primarily of phylogenetic importance, whether regarded as being originally necessary to the continuance of life, or impressed upon it from without, and enter the life of the individual as such, in connection with the sexual and reproductive functions.

The experiments of Maupas<sup>5</sup> with *Stylonichia pustulata*, one of the most highly developed protozoans, are interpreted by him (in opposition to Weissmann's view of the immortality of the protozoans) as demonstrating the fact of senile degeneration followed by death in these animals. *S. pustulata* multiplies by division at a temperature of 24° to 28° C., dividing as often as five times in twenty-four hours.<sup>6</sup> Beginning with an individual which had just conjugated, Maupas followed the multiplication to the 313th division when he had 510 individuals. He

<sup>1</sup> Life and Death, "Biological Memoirs," p. 135.

<sup>2</sup> "Ueber der Ursprung des Todes."

<sup>3</sup> *Op. cit.*, p. 6.

<sup>4</sup> *Op. cit.*, p. 54.

<sup>5</sup> *Recherches expérimentales sur la multiplication des infusoriers ciliés*, in the *Archives de Zoologie expér. et gen.*, 1888, No. 2.

<sup>6</sup> If all of the resulting individuals could be nourished to the fiftieth generation, that is, in thirty days, there would be one followed by forty-four zeros, which, if united in one mass, would make a sphere a million times greater than the sun in volume.

found that at the 100th division degeneration began and increased to the 240th. At the 130th generation, sexed individuals appeared, which were about half the original volume. At the last fission the animals were only 1-60 of the original volume. At the 316th division he isolated one of the 510 individuals and found that it produced "nothing but abortions, incapable of reproducing, and which shortly died."<sup>1</sup> This extinction Maupas calls senile degeneration, thus very questionably homologizing this series of separate cells, artificially prevented from normal conjugation, with a series of mutually dependent and connected cells such as may be found in any metazoan. A. M. Marshall<sup>2</sup> appears to accept this homology, but nevertheless agrees with Weissmann in thinking that death is not an intrinsic necessity of life, but appears first in the higher protozoan in close reciprocal connection with conjugation and reproduction. Since we do not know, says he,<sup>3</sup> "at what period or to what extent the somatic cells of a metazoan lose their power of conjugating," nor what occurs in vaccination or transfusion of blood, he suggests, as a matter of theory, the possibility of discovering some means of rejuvenescence for the somatic cells, a possibility which G. A. Stephens of Norway Lake, Me. ("Long Life"), in establishing a laboratory for the purpose, seems to be inclined to devote some effort towards realizing!

Other special hypotheses on the causes of death have not been particularly fruitful. Bütschli<sup>4</sup> thinks that life is the result of a ferment which the protozoans and the germinative plasma have the power of manufacturing. When the ferment is exhausted, life ceases. According to Lendl<sup>5</sup> every cell by the very fact of living accumulates in it substances, some useful, some not, which are nevertheless foreign to the pure germinative plasma. This material he calls *ballast*, and regards it as the cause of death. The reproductive cells keep themselves pure by loading this material on to other cells. He supposes that the protozoans divide so that one cell retains the ballast, while the other is free. A certain number of the protozoans are thus doomed to death. Delbœuf<sup>6</sup> says that the precipitation of the substance of the organs towards the inorganic causes death. Dantec<sup>7</sup> represents death with

<sup>1</sup>J. Delbœuf, "*Pourquoi mourons-nous?*" *Rev. Phil.*, Mar. and Apr., 1891.

<sup>2</sup>"Biological Lectures and Addresses," chap. on Death, p. 283.

<sup>3</sup>P. 287.

<sup>4</sup>"*Gedanken über Leben und Tod*," *Zoöl. Anz.*, V, 64-67.

<sup>5</sup>"*Hypothese über die Entstehung von Soma- und Propagationszellen*," Jena, 1890.

<sup>6</sup>*Art. cit.*

<sup>7</sup>*Rev. Phil.*, Jan., Feb. and May, 1895.

the primitive forms as an alternative to evolution, or change into another species. This becomes necessary, both because material for assimilation becomes exhausted owing to the narrow confines of the globe, and formed products are left within the plastid. He thinks that it might be much more possible to develop a new species from a moner than to begin higher up the scale where the plastids or individual cells are already highly developed. Delage,<sup>1</sup> observing the almost universal correlation of differentiation with loss of germinative power, looks upon differentiation as the cause of death. Minot<sup>2</sup> insists upon the converse of this and regards the embryo as a special arrangement permitting the increase of undifferentiated cells, and consequently a higher organization. Spencer says that for both somatic and germinal cells it is a matter of environment which may permit or not the continuance of nutrition.

Of the general vital theories, all of which bear upon the question of death and senility, we shall be forced to confine ourselves to a brief mention of the ideas of Roux, which perhaps, because he has paid the greatest attention to ontogeny, apply more directly to the concrete facts, about to be discussed, of the last stage of human existence, where, with the ceasing of the deeply hereditary racial or reproductive life, the more purely individual or ontogenetic features are more sharply defined. Roux<sup>3</sup> is described by Delage in contrast with the animists, evolutionists, and micromerists as an organicist, by which he means the acceptance of a moderate determination by heredity with the addition of "surrounding forces, always active, always necessary, not simply the condition of activity, but an essential element of the final product."<sup>4</sup> Roux thus harmonizes the extremes of Weissmann and Goette, already referred to, by bringing to view the fact of an internal or physiological struggle for existence among the organs, the cells, and the protoplasmic molecules of the organism. "This unsimilarity of parts," says he,<sup>5</sup> "makes it impossible to establish laws of heredity which shall govern details of function to the last cell or molecule,—as in any army the commander-in-chief does not give special orders beforehand affecting every private in the ranks. There must be a possibility of adaptation to surroundings, especially in details, which, too, are more

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<sup>1</sup> *Op. cit.*, p. 709.

<sup>2</sup> *Biol. Centr.*, XV, 15.

<sup>3</sup> "*Der Kampf der Theile im Organismus*," Leipsic, 1881.

<sup>4</sup> *Op. cit.*, p. 720.

<sup>5</sup> "*Der Kampf der Theile im Organismus*," p. 71.

easily changed than events on a larger scale." How is this freedom of organs and of adaptation obtained?

Roux believes that the principle that lies back of all development of tissues and organs is over-compensation of what is used, a quality which permits self-regulation, and is really a necessary precondition of life. Living matter, unlike inorganic matter, presents an external continuity in spite of the change of conditions. To effect this, assimilation must always be in excess (over-compensation), for if less than consumption the organism comes to an end of itself. If equal, conditions change, and nourishment will fail or injurious events will cause destruction. Continuance can only be assured when more is assimilated than is consumed. He illustrates this by the example of fire, which assimilates more than it uses, *i. e.*, it always has energy left over to kindle new material. This would (like life) become eternal if it did not use up materials quicker than other processes can make them. In the same way organisms assimilate more than they consume, but they do not turn all they use to assimilation; energy remains over by which the process performs something. This work-product controls the excessive assimilation which otherwise would come to an end by not having sufficient material to assimilate. He thus regards the more complex processes of life as essentially a radiation of assimilation, which, although not identical with combustion, is similar to it, the load which it carries favoring its continuity. This radiation, load, or work-product becomes directed, of course, by natural selection, to keep up a supply of food, primarily by moving the assimilating mass. Performance of function over and above assimilation is just as much a condition of continuous assimilation as assimilation itself is of performance. On the other hand there comes to be an inverse relationship between growth and production (within limits), and we have capacities which, although they use up material, do not in themselves increase assimilation. The course of development consists in properly directing this work-product.<sup>1</sup>

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<sup>1</sup>The proper growth of the higher centres favors permanence. Idiots age much earlier and die younger than normal people. Too rapid growth seems connected with this. Geoffroy St. Hilaire (*Hist. des Nom.*, 17th ed., Vol. I, p 197) has given full particulars of a boy of six who was five feet high and broad in proportion. His growth was so rapid that it could almost be seen. He had a beard, looked like a man of thirty, and had every indication of perfect puberty. He had a full, deep bass voice, and his extraordinary strength fitted him for all country work. At five he could carry any distance three measures of rye weighing 84 lbs., and at six years and a few months he could easily carry on his shoulders bur-

This so far represents merely a continuous productability of function in connection with assimilation. But a productability which is stored up and discharged by an outer stimulus of environment will be much more economical, and will give rise to what we find as reflex excitability. When this reflex work-product dominates, according to circumstances, function will sometimes be greater and sometimes less. If under these conditions assimilation keeps on continuously, there must sometimes be an overplus, sometimes a balance, and sometimes by excessive function death, and thus elimination. To avoid this last, it is necessary that assimilation should depend upon use or upon a stimulus which use calls forth. From the psychical side this stimulus is recognized as hunger.

This kind of process where stimulus is an indispensable factor, is more special and limited than the more general process of assimilation plus movement, etc., but has characteristics which favor it greatly in the struggle for existence. "Connected with the most complete self-regulation of functioning is the greatest saving of material, while those parts always according to their use are strengthened and grow, the unused degenerate and the material for their subsistence is saved. This kind of process unites the greatest economy with the highest functioning of the whole, but at the cost of the independence of the parts."<sup>1</sup> Senescence becomes thus a result of differentiation, in which the parts exist merely on account of the function which they perform for the whole. The senescing organs wither up like state officials after pensioning, although they may linger on as pensioners for a long time, and may even descend in this condition from generation to generation, a fact which often allows of fresh starts in development. During the course of a life-time the organism moves from a more general, more easily impressible condition to one which is more perfectly mechanized. "Through a long period it becomes, through the continuous working of a given stimulus, more completely adapted to itself, and also more differentiated, and thereby more stable, so that an always increasing opposition is formed to the additional development of new forms and characteristics."<sup>2</sup>

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dens weighing 150 lbs. But he did not become a giant, as every one expected. He soon got feeble, deformed, his intellectual faculties did not develop. He became idiotic and soon died. Bébé, the court fool of King Stanislas, had all the attributes of decrepitude at 23 years.

<sup>1</sup> "Der Kampf der Theile im Organismus," p. 224.

<sup>2</sup> *Op. cit.*, p. 201.

Dantec,<sup>1</sup> while opposing himself to Roux in many points, really offers a simpler form of Roux's conception of over-compensation of used material. According to him function and assimilation are not to be separated at all. He evidently rejects the ordinary analogy of a machine capable of wearing out or running down (fatigue), and regards the activity of every cell or plastid as a chemical combination in which the substances which increase the growth of the plastid are added to the living matter. During the same reaction, however, there may be by-products formed, which, until their removal from the neighborhood, stand in the way of future reaction (fatigue, senility, etc.). Dantec also simplifies the question of death by emphasizing the fact that what dies is always the cell or plastid, or a number of them. The death of a many-celled individual is nothing additional or independent of this.

*Longevity and Natural Selection.* Whether senility or death is ultimately the most deeply-rooted in the vital process, there seems to be no doubt that in the case of man as compared with the animals most closely related to him, the last of the old age period at least, has come in as a survival, which is correlated with, if it does not owe its existence in the struggle for existence to the greater development of the higher moral and sympathetic qualities of the race.<sup>2</sup> Other reasons, however, have prepared the way, or assisted in this result. Among many of the lower animals a long life is frequently a necessity for the species, when it is associated with decreased fertility or lack of ability to raise offspring. Eagles, for example, live to about 60, but owing to the dangers to which the eggs and young are exposed from weasels, mice, etc.,<sup>3</sup> it takes about this time to successfully raise a pair. Many plants and animals, on the other hand, make up for their short lives by great fertility. This distinction, it is evident, is only of value when comparing species, and is of very little significance for the individual. With some animals, as with man, where the period for raising the young is long, it is found that life is normally increased to this extent beyond the actual sexual period.<sup>4</sup>

But beyond the immediate value for the offspring, in man at least there is an added value in old age for the tribe and

<sup>1</sup> *Rev. Phil.*, Feb., Mar., 1896.

<sup>2</sup> Cf. G. M. Humphrey, M. D., "Old Age," 1889, p. 8.

<sup>3</sup> Weissmann, "The Duration of Life," p. 13.

<sup>4</sup> With man the period of growth is variously put, and is actually different in different peoples and classes, the higher classes of the highest races not ceasing to grow physically till about 30. If the grand climacteric be placed at 50 (often earlier), this would give 80 years as the normal life-time, the latter 30 years of which is held in fee for the support and education of the young.



race. Dr. Gascom<sup>1</sup> points out that personal, family and national prosperity and affluence are increased by longevity, and thinks that "longevity, peace and liberty would bless all the world with abundance."<sup>2</sup> In early races old men were the convenient and portable libraries, offering a means of ready reference to past experience. If they were not actually the leaders in times of strain and stress, they were very generally the counselors, the prophets, and the seers.

But while the practical results of old age have probably been favorable, this cannot be expected to have been foreseen or calculated upon. Unreasoning sympathy, an extension of the love for wife and child, has been the deepest motive power. This even becomes intellectualized abnormally in a kind of fetichism, instead of resulting in a calculation on the greatest good for the greatest number, which, despite the possibility of exceptions of individuals like Bentham and J. S. Mill, has never yet become a motive for masses of men. With certain tribes of South Australia, for example, it is *taboo* to catch or eat certain animals until they (the Australians) reach an advanced age. They are convinced that the most evil consequences would result to themselves individually if this rule should be broken. These animals, it is observed, are just those which are the easiest to catch, are perfectly wholesome and nutritious, and thus the best adapted for old people's use. A large proportion of the motives which govern our treatment of the old to-day are really only more refined, although sometimes equally superstitious, and perhaps equally beneficial fetichisms.

From the point of view of natural selection to the question whether old age is to be regarded as an abnormal phenomenon on account of the small number of people who attain it, as Montaigne suggested,<sup>3</sup> or whether the most of men should naturally reach a much greater age,<sup>4</sup> that men do not die, but kill themselves, it might be replied that the present condition where only a few reach an elderly age may be the most serviceable for the race in its present state. As G. M. Beard points out,<sup>5</sup> the majority of people in all lands are muscle-workers rather than brain-workers, and quotes Dr. Mitchell as having shown that if of the population of Scotland a few thousands were destroyed or degenerated and their places unsupplied, the nation would fall downwards to

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<sup>1</sup> Prize essay on "Longevity" written for Assurance Co., Boston, 1869.

<sup>2</sup> P. 6.

<sup>3</sup> Essay on "Age."

<sup>4</sup> 100-150, as Flourens held possible.

<sup>5</sup> "American Nervousness," 1881, p. 97.

barbarism. But if these do exist, a superfluity may be unnecessary. Leaders, prophets, seers, are in the way if in too great a number, and it may be better for men to "kill themselves" in effective service, even if not of the rarest kind, than to go on to an old age full of nothing but selfishness, weakness and discontent.

On the other hand, the results of Humphrey,<sup>1</sup> which show that old age is correlated with large families, lead us to expect a gradual increase in old age and just among those stocks which have been successful in serving the basal altruistic functions of the race. The more radiated altruisms also seem favored in the struggle for longevity. Dr. G. M. Beard,<sup>2</sup> believes he has established from statistics that brain-working classes live longer than muscle-working classes, and "that the greatest and hardest brain-workers of history have lived longer on the average than brain-workers of ordinary ability and industry." Donaldson<sup>3</sup> shows from the present admittedly meagre statistics that the curve of brain weight rises with eminent men to 65 years, while it falls from 55 in other classes. Clergymen are particularly long-lived, while born criminals and idiots age quickly and die young.<sup>4</sup> Neurasthenics,<sup>5</sup> generally of an overdeveloped type, are long-lived, although not prolific, as if they represented the last effort of goodstock.

When these distinctions depend upon choice of professions, it has been usual to assume that the character of the occupation exercises the determining influence, although it may just as reasonably be held that the naturally long-lived, sometimes by a sort of instinct, as Dr. Gascom<sup>6</sup> thinks, choose professions where rewards are not obtained till late in life. Farr<sup>7</sup> shows that the greatest commercial value of a laborer is at 25, that of a professional man about 40. As Beard says:<sup>8</sup> "With muscle-workers there is but little accumulation and only a limited increase of reward; and in old age, after their strength has begun to decline, they must, with increasing expense, work even harder than before. . . . The literary or scientific worker goes on from strength to strength, until what was at 25 impossible, and at 30 difficult, at 35 becomes easy and at 40 a pastime." The oppor-

<sup>1</sup> *Op. cit.*, p. 40.

<sup>2</sup> "American Nervousness," chap. on Old Age, p. 195.

<sup>3</sup> "Growth of the Brain," p. 324.

<sup>4</sup> Lombroso "*L'homme criminel*." Strahan, "Suicide and Insanity," p. 112.

<sup>5</sup> Beard, Krafft-Ebing *et al.*

<sup>6</sup> *Op. cit.*

<sup>7</sup> "Vital Statistics for 1885."

<sup>8</sup> *Op. cit.*, p. 208.

tunity to choose a profession also is generally associated with wealth and thrift, which represents ancestral effort, and increases with old age. The correlation is just as marked in one way of looking at it as the other. Both factors have probably had their due effect.

*Involution.* It must be admitted that the phenomenon of involution entails ultimately a general decay and weakening of most of the physiological functions. Height and weight decrease. Locomotion and digestion are impaired. The circulation is feeble, the temperature frequently lower. In many cases the blood becomes uræmic and venous. The arteries harden or the muscular coats undergo fatty degeneration. The testicles become dense and decrease in volume and weight, although spermatozoids are found in half the cases to the latest age,<sup>1</sup> some observers, however,<sup>2</sup> describing them as weak and languishing. The prostate frequently hypertrophies. The ovaries become entirely obliterated, and the vagina sometimes disappears. In the brain the cells atrophy and many of the associational fibres disappear, while the connective tissue hypertrophies and takes their place, or more or less hydrocephalus effects the same result. Ottolenghi<sup>3</sup> finds that sensibility to pain increases toward adult life and diminishes with old age, but that with adults sensibility varies more with social station and grade of degeneration than with age. In morbid cases melancholia<sup>4</sup> and dementia, in line with the general lack of susceptibility to acute diseases, is more frequent proportionally to other insanities than in earlier years. All the magnificent and touching poetry of the last chapter of Ecclesiastes is abundantly supported by the details of modern science.

As to the order in which this involution occurs, a great variety of opinions has been advanced. Reveille-Parise<sup>5</sup> thought that deficient oxidation connected with lessened vascularity of the respiratory organs was the first sign of failure, thus with the ancients making the breath (*spiritus animus*, etc.) the fount of life. Stephens ("Long Life") on the other hand suggests that excessive oxidation is the proximate cause of senescence, showing itself in dryness of the skin and wasting of the organs generally. The theories of Lendl, Dantec, Delage, already referred to, in regarding failure to

<sup>1</sup> Duplay, *Arch. gen. de Med.*, 1843, 1855.

<sup>2</sup> Reveille-Parise, "*Traité de la Vieillesse*," Paris, 1853.

<sup>3</sup> "Das Gefühl und das Alter," *Zeitschrift für Psy. u. Phys. der Sinnesorgane*, Jan., 1896.

<sup>4</sup> Sixty-seven per cent. according to Fürstner, *Arch. für Psy.*, pp. 465.

<sup>5</sup> *Op. cit.*, p. 36.

carry on a chemical process as the ultimate cause, involve respiration as only one of the necessary conditions. Hamelin thought the continuance of ossification, especially as affecting the thorax, as the essential point of departure. Cazalis, followed by many others in more recent times, regarded arterio-sclerosis with its consequences of renal and liver disease, cirrhosis, toxic blood, and various kinds of apoplexies, as the starting point of senility. Bouchard thinks that old age begins with a failure in nutrition, and traces diabetes, gout, obesity, etc., to this source. This, as Andre<sup>1</sup> points out, is hardly a distinction, the question rather being, where does nutrition begin to fail? In answer to this Tilt,<sup>2</sup> basing his opinion on a large collection of cases, refers the initial failure to the sympathetic ganglia which innervate and control the blood vessels of the great viscera, an involution which is first shown in the reproductive functions. Following Haller, he regards the sympathetic as an off-shoot of the cerebro-spinal system, an opinion which is supported by the facts of recent embryology. This failure in the sympathetic shows itself about the time of the grand climacteric in general malaise, sleeplessness or excessive sleep, blushings, slight nervous troubles, with their psychical correlations of uneasiness, irritability, slight melancholia. On the other hand the more serious nervous troubles, according to his carefully elaborated statistics, are much more frequent earlier in life. From an estimation of the cases admitted during ten years to the Bethlem Hospital for the Insane, he shows that liability to insanity for women is greatest at 36 to 40, and diminishes from 40 to 55.<sup>3</sup> He supports this by the fact that deaths from brain disease, as shown by the Registrar General's reports, are most frequent in women from 20 to 40, results in accordance with the statistics of Haslam, Pinol, Esquirol, and Foedéré. With men, the period of greatest liability is from 40 to 60. Deaths from all kinds of nervous diseases are only 13% of the whole, about half of which are due to infant eclampsia, and occur about 5 or 6. Of the remaining moiety, it is to be remembered that a large proportion, more than half, are directly due to arterial degeneration, and not primarily an affection of that portion of the brain which subserves the higher psychical functions,<sup>5</sup> while here, too, are to

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<sup>1</sup> "*L'Hygiène des Vieillards*," Paris, 1890, p. 36.

<sup>2</sup> "Change of Life," 1882.

<sup>3</sup> *Op. cit.*, p. 115.

<sup>5</sup> Cf. Age Curve given by Althaus, "Diseases of the Nervous System," p. 8.

be found the cases of phylogenetic degeneration evidently not due to the influence of old age.

By another way, however, through the support of the cerebro-spinal system to the sympathetic, the former may indirectly affect the innervation, the lack of which results in arterial aneurisms, lack of elasticity, etc.<sup>1</sup> Hammond, for example,<sup>2</sup> points out that traumatic lesions of the marrow are complicated with functional trouble of the cervical sympathetic. "These cases go to show that the cervical sympathetic draws a great part of its nervous action from the superior segment of the spinal cord." Claude Bernard<sup>3</sup> showed that if an animal was debilitated, excision of the cervical sympathetic resulted in mucous suppuration of the bronchi, etc., a trouble which Humphrey<sup>4</sup> notes as one of the commonest affections of old age. The value of the tone of the cerebro-spinal system to the height of the blood-pressure, proximately mediated by the sympathetic, is shown by Owsjannikow,<sup>5</sup> who demonstrated that removing layer after layer of the trunk causes a fall of manometrical pressure before the pons (circulation centre) has been reached. Gley<sup>6</sup> supplements this by showing that cutting off the medulla causes a fall in pressure, cutting out the spinal cord a greater fall, after which, however, contraction of the blood vessels was still possible in reaction to the injection of certain chemical substances, thus proving the partial independence of the sympathetic as well as the support afforded by the spinal system.

The importance of this connection is witnessed by many more purely psychological phenomena. Mosso ("*La Peur*," *e. g.*) has made special studies on blushing (less prevalent in age) and cerebral circulation. Careful experiments with the plethysmograph in many psychological laboratories have shown the almost instantaneous influence of psychical impressions on the circulation of various parts of the body.

In face of death by starvation, the most typical of all forms of death, it has been abundantly demonstrated that while all the other organs of the body gradually atrophy, the heart, the kidneys, and more especially the brain, remain exempt.

<sup>1</sup> The smaller vessels of the brain itself are not generally supposed to be supplied with sympathetic fibres, which, if a fact, would only result in making the strain of a weakening sympathetic fall primarily upon the other organs.

<sup>2</sup> "Diseases of the Nervous System," 1890, p. 866.

<sup>3</sup> "*Path. du Sys. Nerv.*," T. II., p. 535.

<sup>4</sup> *Op. cit.*

<sup>5</sup> Quoted by Meynert, "Psychiatry," trans. by Sachs, 1885, p. 206.

<sup>6</sup> *Arch. de Phys. n. et p.*, Brown-Sequard, 1894, p. 202.

As Mosso says,<sup>1</sup> "the last overflow of the vital material of the body is sent by the last heart-beat to the brain." He points out that increased nervous stimulability of the brain in face of starvation would be a favoring factor in natural selection. The flaring up of dormant faculties just before death is, no doubt, an expression of a similar condition.<sup>2</sup>

With the approach of old age there seems to be plenty of cases which follow an order of involution which is not descending. Muscular power, for example, generally fails before the capacity to direct the labor of others. Humphrey, from reports of 900 cases observed by medical and scientific men, notes "how many of the very aged are in good possession of their mental faculties, taking a keen interest in passing events, forming a clear judgment upon them, and full of thought for the present and future welfare of others."<sup>3</sup> Even in centenarians "the brain held out as well or better than the other organs."<sup>4</sup> In green old age (*age de retour*) there can hardly be any doubt that the intellectual qualities are even relatively improved. Balfour,<sup>5</sup> following Beneke<sup>6</sup> and other anatomists, points out a rather remarkable adaptation which favors the brain, namely, that while the other arteries of the body may be completely calcified, the internal carotids and vertebral, which feed the brain, normally remain soft and yielding. Towards old age also, the heart normally hypertrophies, beats faster, and correlated with these changes the blood itself actually increases in hæmoglobin, and when these changes do not occur at the proper age the whole physical and mental health suffers. Heart stimulants, *e. g.*, digitalis and strychnine, the latter of which at least acts primarily on the nervous system, are found highly successful, often changing at this period of life the anæmic and dejected individual into a healthy and active old man. The most commonly repeated difficulty of either the natural or the artificial adaptation for old age, appears to be degenerative changes in the internal arterial coats (which may be primarily caused by lack of innervation). These either by coming off in pieces and forming plugs, or by pocketing in weak spots (miliary aneurisms, *e. g.*), give rise to hemiplegias and apoplexies of various kinds. The maxim of Cazalis, "a man is the age of his arteries," although by no means applicable to every case, seems to be supported by greater numbers than the descending degeneration theory of involution.

<sup>1</sup> "Die Ermüdung," p. 285.

<sup>2</sup> Cf. Féré, "*Path. des Emotions*," p. 170 et seq.

<sup>3</sup> *Op. cit.*, p. 24.

<sup>4</sup> *Op. cit.*, p. 48.

<sup>5</sup> G. W. Balfour, "The Senile Heart," 1894.

<sup>6</sup> "Die Altersdisposition."

Even in the etiology of the distinctly mental troubles of old age, recent opinion shows an increasing tendency to give a large place to causes of a somatic nature. Of mental diseases generally, Dr. Rohé<sup>1</sup> states that the view that many mental disturbances are due to auto-intoxication is gaining ground among alienists, and cites to this effect Price, Kerkley, Lash, Emminghaus, and Kraepelin. Norberry<sup>2</sup> claims that "senile dementia" covers diseases "essentially different in nature and symptoms." J. A. Houston<sup>3</sup> examined the blood of fifty-two melancholiacs, and found hæmoglobin deficient in every case. The editor of the *Jour. of the Am. Med. Assn.*<sup>4</sup> thinks that most of the cases of mental confusion in old age may be due to uræmic intoxication. Ludwig Wille<sup>5</sup> ascribes the pathological mental involution as originating in "derangements of the circulation and nutrition of the central nerve substance caused by the morbid condition of the organs of circulation," a view in which Kraepelin in his chapter on old age coincides.<sup>6</sup> W. F. Farquharson<sup>7</sup> analyzed 230 cases of melancholia during twenty-seven years, and says, "Leaving out of consideration hereditary disposition and previous attacks, the cause of melancholia was found in a marked preponderance of cases to be of a physical nature." Nötzli<sup>8</sup> brings to view the great prevalence of lesions due to arterial degeneration. He carefully weighed the different parts of the brain in 110 cases, and found that the cortex lost considerably less than the basal ganglia. Within the cortex the frontal lobes did not lose more than the occipital. Senile dementia is, however, in the most of cases more probably a phenomenon of phylogenetic degeneration, and is not to be regarded as a peculiar characteristic of old age. Krafft-Ebing and Lombroso claim that senile dementia is more frequent with the morally insane and born criminals than with other classes.<sup>9</sup>

From these facts it would seem as if Roux's conception of a liberating stimulus to the lower ranges of assimilation originating in and controlled by the highest work-product, would be fulfilled by some such relationship of the cerebro-spinal and sympathetic nervous system as Tilt suggests, when the stimulus to nutrition is to be regarded as the last or the most

<sup>1</sup> "Mental Diseases," *Medical Annual*, 1894.

<sup>2</sup> *Hosp. Bulletin of 2nd Univ. Hosp.*, Aug., '92.

<sup>3</sup> *Boston Med. and Surg. Jour.*, Jan. 18, 1894.

<sup>4</sup> "Psychoses of Old Age," Nov. 30, 1895.

<sup>5</sup> "Old Age and its Psychoses," Hack Tuke's Dict., p. 869.

<sup>6</sup> "Kompendium der Psychiatrie," Leipsic, 1883, p. 367.

<sup>7</sup> *Jour. of Mental Science*, London, Jan., Apr., 1894.

<sup>8</sup> "Ueber Dementia Senilis," 1895.

<sup>9</sup> Lombroso, "L'homme criminel," p. 569.

complete form of the general nervous activity, and that the body, as far as it is an organism, is so mainly because there is thus brought into immediate connection the extremest functions of the organism. The human body is, first of all, an organism, and the organs of relation are thus in normal cases the most permanent and enduring.

Despite these facts, however, since the days of Bichat and earlier, there have not been wanting authors, principally alienists, to hold that the failure of old age begins normally at the top. In the present times Ribot, Ross and Mercier have adopted this theory. Mercier<sup>1</sup> regards the essential phenomena of old age as a cutting off of the most recent and most highly developed brain layers. Old age is like a frost-blight, which nips the buds the latest grown. He and Ribot<sup>2</sup> also seem not to distinguish very clearly between the phylogenetic development, repeated and appropriated by the individual, and the mere repetition of actions in time in as far as this refers to old age. Memory of recent events no doubt fails in old age. But what evidence have we for supposing that these acts of memory presuppose any new brain growth, such as would be necessary if we are to use a simile like that of the budding tree, or the upper and lower brain levels of Mercier's theory? The really most recently grown structure (like the city which has originated from the surrounding country, used as a storage depot and an organ of control) may be just as permanent as any other, or more so, except under the strain of distinctly degenerative (phylogenetic) causes. No doubt in an ultimate sense we must admit the complete co-determination of structure and function, but this does not excuse us for running away with crude ideas of structure, wholly derived from the limited range of present observation. In brain matters particularly, our knowledge of function is vastly ahead of that of structure. Memory, it must be remembered, is no mere partial faculty. It is really a fundamental quality of all tissue.<sup>3</sup> And with the loss of memory that comes from hemiplegia and similar morbid causes, which give the greatest number of cases of aphasia upon which the strongest argument rests for degenerative senile involution, we have frequently a portion of the brain entirely destroyed, so that no vital quality, memory or otherwise is left behind. Where this focalized lesion attacks the language centres, there are no doubt many cases in which in a

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<sup>1</sup> "Sanity and Insanity."

<sup>2</sup> "Diseases of Memory."

<sup>3</sup> "Memory in Disease," Strahan, *e. g.*



general way the degeneration begins at the top of these centres ; but there are others where this does not seem to be the order followed, and besides this there are many cases, as Bastian<sup>1</sup> points out, "where aphasia has been most complete, but the mental powers have been well preserved." The number of cases, too, where the left brain (the centre of language) is affected do not seem to be the greatest. Brown-Sequard found, of 121 cases of hemiplegia, the left brain was affected in twenty-four, the right in ninety-seven cases.<sup>2</sup>

The normal failure of memory, so-called, in old people is really a failure of recollection of certain events in preference to certain others. This may not be due to descending degeneration. Recollection, while it presupposes memory, is yet something more. In the first place it depends directly upon blood circulation and drops out in sleep. Here it must be admitted that Mercier has the courage of his conviction, and is consistent with himself in saying that sleep itself is a form of dementia, indeed the "last and most complete stage of dementia known as coma,"<sup>3</sup> an extreme which surely indicates the necessity for more careful distinctions.

Old people may dwell upon youth and early married life because it was their happiest period, while, as far as we have any proof, this is the period of the formation of the highest layers, the latest buds, etc. The only way, if we are to apply recapitulation, is to compare memories, *i. e.*, capacities formed in early childhood with those later on while still in the course of recapitulated phylogenetic development. Beyond this period there exists a more purely ontogenetic development which has not had the same necessity for being so thoroughly established in philogeny, to which the criterion of race development does not apply to the same degree. Peculiarities of the individual, or of his immediate ancestry, as Roux and Darwin mention, come out more strongly. These of course may form the new material for selection and may result from a new creation, or from a pathological condition or decay. Geddes, indeed, is of the opinion that all sports or variations may be originally pathological. The beginning and continuance of senescence may thus be the most important of all the periods of life for the origination of fresh development. But in any case we are not in a position to apply the recapitulation theory.

Instead of a fresh budding of growth, the recollection of events may just as well be compared to the sending of a train,

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<sup>1</sup> "Paralysis from Brain Disease," p. 198.

<sup>2</sup> Quoted by Bastian. *Op. cit.*, p. 209.

<sup>3</sup> *Op. cit.*, p. 299.

for example, between New York and Chicago. That the train does not pass is no proof that the track is destroyed. There may be at the time or for short notice (the inelasticity of age) no coal or no crew. So no doubt in imperfect recollection we have a lowered state of the physical organism, which is similar to, and perhaps caused by, greater slowness and imperfection of digestion and circulation as well as by general physical decay, but which is no proof that there is greater structural or permanent functional impairment of the higher brain-paths than of others, or of the brain itself as compared with the rest of the body.

Here early writers, Bichat for example, seem to have initiated a faulty way of looking at the brain, in drawing so strict a distinction between the animal and the vegetative functions. Careful measurements now show us that in sleep, as in other lowered functional conditions, such as old age, the vegetative as well as the psychical functions are materially lessened, and we have no right to regard the plastids of the brain, which only more specially subserve animal or psychical functions, as not being just as vegetative and just as much organs of digestion as any others in the body. We have here not a question of specialized vegetative functions of the really living protoplasm. The plastids of the stomach, for example, are as capable of being starved as any other, since nervous stimulus is necessary for their activity, and the food which they use is furnished by the blood as for any other organ.

The body, although in itself an imperfect organism, is, in fact, as Roux insists, a collection of parts which are themselves again imperfect organisms. The vegetative functions, meaning by this simply the basal qualities of assimilation and digestion, belong to every plastid. Among these, however, a struggle for existence takes place, the results of which are more marked in old age than in any other period, but for the just estimation of which we must not confine ourselves to any one class of phenomena, and more especially when these are of an admittedly morbid, *i. e.*, phylogenetically degenerative character.

The truth seems to be that in the struggle for existence among the various organs, through the course of a life-time, certain of these, partly through hereditary strength, and partly through a greater compensation due to exercise, or for their opponents either over or under use, obtain an advantage over the others, which, when it becomes so marked as to deplete some other necessary organ, results at last in debility and death. The organism in old age thus loses its power of self-regulation and, as Johannes Müller<sup>1</sup> recognized,

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<sup>1</sup>"*Physiologie*," Coblenz, 1844, Bd. II, S. 767.

is to be compared " more to an ingenious mechanism than to that basal form of the organic whole which produces the mechanism from itself, and makes it capable of compensating for its loss. Therefore in old age a very small outer strain is able to bring to an end the whole, as is the case with a mechanism."

Even when the good adjustment and balance of the several parts which are necessary to a healthy old age exists, "a time comes at length when in the course of the descending developmental processes, the several components of the machine, slowly and much, though equally, weakened, fail to answer to one another's call, which is also weakened; a time when the nervous, the circulatory and the respiratory organs have not force enough to keep one another going; when the wheels stop rather than are stopped, and a developmental or physiological death terminates the developmental or physiological decay. The old man who had gone to bed, apparently much as usual, is found dead in the morning, as though life's engine had been unable to repair itself in sleep sufficiently to bear the withdrawal of the stimulus of wakefulness. Or some exertion may be followed by too great exhaustion. Dr. Willis, the attendant upon King George III, at the age of 90, after a walk of four miles to see a friend, sat down in his chair and went to sleep, or was thought to be asleep, but he did not wake again. Or some slight scarcely noticed excitement may have the same result. A cattle dealer, aged 98, who attended Norwich cattle market on a Saturday of last year, soon after talking and laughing somewhat heartily with a few friends on the following Tuesday, was found to be dead. Or a slight indisposition, further lowering the status and force of some organ, fatally disturbs the feebly maintained equilibrium. A lady, aged 94, attended the early service at church, walking a distance of a quarter of a mile, to and fro, caught a slight cold and died in the night."<sup>1</sup>

Among the different organs there is none whose normal activity conduces more to the best balance of the various parts than does the brain. This, indeed, along with the storage necessary for such a task, appears to be its principal function. It is thus easily understood why the intellectual and liberal professions allow the greatest opportunity for longevity. Ultimately the forces of life are controlled and stimulated by the highest development of the work-product of assimilation, represented in our psychical life as thoughts and feelings. Intellectual labor, emotional susceptibilities, ideals and aspirations, and their wise direction by a fully

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<sup>1</sup> Humphrey, *op. cit.*, p. 6.

cultivated art of education, are thus functions which without transcending the here and now of a strictly biological sphere, tend to increase the vigor and the length of life.

With the beginning of the grand climacteric and the increase of age, the individual qualities *per se* assert themselves, with of course only a relatively greater strength. These qualities are, however, formed in the earlier periods of life and in contact with the great passions which underly them, the brain, as the highest work-product of assimilation, offering the means for radiation. In these periods it has been necessary in the course of natural selection for the individual to be held under by the race. But with the age of descent he passes out to a certain extent from the protecting shadow of the phylogenetic life and becomes more ontogenetic and individual. Old age is the period of distinction. It is in line with this that it is a period of extremes among individuals, which may account for the fact that authors have differed so much in describing its features. Cicero, for example, praises old age, while Aristotle condemns it. Melancholy, irritability, egoism increases; so does good health, calmness, sacrifice. Samuel Rogers, the poet, said he never knew what health was till he was 55. It is the race life, however, that is normally the source of our greatest force and happiness, and old age is only successful when it has so absorbed this life that its more intellectual service becomes its deepest motive and highest happiness. In maturity we serve the race by the blind impulsion of instinct if in no other way, but in old age much more because we elect to do so. In this respect old age is really the test of life from an individual standpoint. Solon's apothegm, a man can never be pronounced happy until he is dead, had no doubt some such significance.<sup>1</sup>

*The questionnaire.* With the aim in view of obtaining a general picture of the common notions on the subject of old age, death and the future life, the questionnaire subjoined<sup>2</sup>

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<sup>1</sup> Cf. George Meredith's poem on "Old Age."

<sup>2</sup> TOPICAL SYLLABUS FOR GENETIC PSYCHOLOGY.

(*Second Series, Academic Year, 1895-6.*)

#### IV. THOUGHTS AND FEELINGS ABOUT OLD AGE, DISEASE AND DEATH.

I. *As a child*, how old were people you thought aged? How long did you want to live? How did you fancy old people felt, thought, etc.? Did you love the companionship of any old people, and what traits in elderly people attracted and what repelled you?

II. *As a child*, when and how did you make your first acquaintance with death, with details, and how it affected you? What were your earliest ideas about corpses, funerals, hearses, coffins, shrouds, mourning, the grave, and what took place in it? Did you think of worms, bones, etc., or conceive the body as feeling cold, damp,

dark, or shut in and smothered down? Did you have spells of dwelling on such things, and did you develop any mental imagery of the soul in or leaving the body, or what it was, or where, or its state? Was it gaseous, luminous, easily blown away, bluish, heart-shaped, resident in the head or breast, or what?

III. What diseases did you fear most for yourself or others? How did you think they acted? What accidents or other death-bringing agents did you develop most imagery about? Did you ever fancy yourself either dead or dying? and, if so, tell all about it.

IV. When in your teens, or later, did you ever have spells of dwelling on death, coquetting with fitting suicide thoughts, or day-dreaming how others would feel or act if you were found dead, and, if so, were these feelings or fancies associated with anger, love or religion, or any other experience, and how? At what period of life have you thought most of these things? Under what circumstances have you ever thought suicide might be justifiable? How, when, and in what condition would you prefer to die? Have you ever been suddenly very near to death, and what were your feelings at the time and afterwards? What background feelings when a sense of the miserable shortness of life comes over you?

V. What used to be and what are your deeper and most instinctive feelings, thoughts or questionings about a future life for yourself or others, and what changes have these sentiments undergone? Are these things fixed beliefs or fluctuating with moods? and, if the latter, describe your different sets of psychic states. How long after death do your thoughts run, and what used to be your fancies about heaven, souls, angelic occupation, association with friends, etc.? Do you have two sets of feelings — one hopes, taught beliefs, and another to fall back on if the former should be more or less mistaken? and, if so, describe them. What is your feeling about the friends you have lost?

VI. Will you ask old people of your acquaintance to either write themselves or tell you whether they dread death, if so, why? What they expect hereafter if they dwell much upon it, etc.? Ask them if they would like to live their life over again if it were to be the same, or to go on to death, and what changes, if any, would make a difference with their answer. Ask what period of life they considered most worth living, and why. Also, what they dwell on most in the past. Ask about their sleep habits, and what they dream of, or what reveries they prefer to dwell in. Ask especially at what period of life they thought most of death. How they first realized they were growing old, and how each increasing sign of it made them feel, and especially ask them to state how the climacteric period affected them. Have they made wills, had life insured, directed about their funerals, and otherwise provided for the disposition of their body or effects, and if not, why not? Get any points bearing on what might be called the psychic phenomena of increasing senescence. Have they ever longed for death, or felt life a disappointment or failure hardly worth living?

VII. State any texts, hymns, phrases, proverbs, sermons, or literature, whether prose or poetry, or any expression or conversation, that have modified your feelings about these things. What is the best literature on old age you know? State also how loss of nearest friends or sudden death or prolonged suffering has affected your feelings. What, if any, *real* sources of consolation have you found?

VIII. State anything you know of the experience, past or present, of your confidential friends in these matters.

was issued some months ago by Pres. Hall and myself, to which were received answers from 226 persons. Our thanks are due to those friends who so kindly furnished us with returns, and in an especial manner to Miss Lillie Williams, professor of psychology in Trenton Normal School, by whose instrumentality a great number of them were obtained.

The returns altogether have furnished nearly 15,000 answers on various subjects, and as there were some 120 questions, it will be seen that on an average only a little over half of the questions were answered by each. About sixty per cent. of the answers were from females, and although these were kept separate in working up the returns, there was not found to be sufficient practical difference between the sexes in the ideas mentioned to keep them separate in this report.

The returns pertaining to childhood are specially valuable as they are derived from reminiscence. A person will generally tell what he thought as a child of such matters much more freely and without bias, than the child is able to tell himself, or than the adult will consent to tell of his present ideas. This latter point is indicated by the number who omit to give their present convictions with regard to the soul and the future life. The importance of child thought with regard to the future life has recently been emphasized by Runze.<sup>1</sup>

In making curves and tables indicating quantitative results, those only which are decided and emphatic are considered as of value in comparison. For this reason the percentages are

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IX. Always state age of every experience, also sex and nationality. Describe, briefly, health, temperament, complexion, size, signs of age, as baldness, decrepitude of any sort in walking, vision, hearing, memory, whether good looking or deformed, etc. Also whether married happily, how long, how many children, their health and success, what circumstances, friends, etc.

Send returns to

G. STANLEY HALL,  
or COLIN A. SCOTT.

Clark University,  
Worcester, Mass., Nov. 1, 1895.

N. B. Please answer as many of these questions as you desire; or, if you should wish to ignore the questions altogether, and communicate your impressions in your own way concerning any of the above topics, your contribution will still be of value, whatever form it takes. Every communication will be treated as strictly confidential, and in the report which will be sent those making returns, everything thought likely to betray the personality of the sender will be suppressed. Those not wishing returns can write anonymously.

<sup>1</sup>"*Psychologie der Unsterblichkeit.*"

kept in whole numbers. This perhaps should always be observed as one of the necessary safeguards of the questionnaire method. The individual cases, however, have an importance of their own, and sometimes the mere fact of a large number of erratic or unrepeatable answers is not without quantitative value. These answers are on the whole like the sediment found in the bed of a stream, partly original or derived from the immediate surroundings, and partly the remains of ancient beliefs washed down by time, but full of fascinating problems for the psychological geologist.

It is interesting in this connection to observe that many of these beliefs show signs of weakening and decay. The limited number who mention hell, for example, indicates a considerable change from the days when, here in New England, the most widely circulated publication of its period (for 100 years, says Tyler) was a poem (!) by the Rev. Michael Wigglesworth. This production, which children were compelled to memorize, gives the course of an argument between unbaptized babes condemned to eternal damnation on account of original sin, and the Lord Christ, in which the latter obtains the best of the argument, but with a show of mercy concludes :

"A crime it is, therefore in bliss  
You may not hope to dwell,  
But unto you I shall allow  
The easiest room in hell."

*Rubric 1. Child's Idea of the Thoughts and Feelings of Old People.*<sup>1</sup> Here it is perhaps natural to find that 80% of those who give returns on this point (104) take a pessimistic view. Of these 24% pity old people because they could not run and play; 12% thought of them as tired and stiff; 14% as weak, miserable and unhappy; tired of life, don't enjoy, indifferent, 14%; felt in way, 6%; thought of nothing but religion, reading the Bible, praying, and what they would do in heaven, 13%; nothing but read papers, sew, knit and can preserves, 12%; cross, 7%; thoughts of death, waiting for death, 19%; wishing they were young, 11%; as willing to die as live, 3%; want to die, 2%; died when they made up their minds to, 1%; rather be a little infant than die, 1%; were solemn, gloomy, stupid, sorry, sad, lonely, sleepy, conceited, jealous, 16%; didn't want others to enjoy, 3%; thought of nothing but the wrong things little children did, 2%; that nothing could hurt them, they could not cry, 3%; did no wrong, 1%; didn't know if they did feel, 2%; never thought about them, 3%.

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<sup>1</sup> Cf. Rubric 4.

Of the 20% who took an optimistic view, 8% thought of old people as happy, that they were wise and knew everything (weather, *e. g.*), 7%; pleasant to have some one wait on you, 2%; do what they pleased, 2%; looked forward to the time they would be children (*cf.* Sully), 2%; preferred to be old, 2%; enjoyed watching children play, 1%.

It is evident from adding the percentages together that for both the optimistic and the pessimistic classes above mentioned, one person may contribute to more than one of the subordinate expressions.

*Rubric 2. What Children Liked in Old People.* Of 140 returns, those who mention gifts, pennies, candies and eatables were 34%; telling stories, 21%; stories of childhood not included in last, 16%; kindness and petting, 16%; those who played with them, 10%; gave means for games and looked on, 8%; gray hair, 15%; caps, 6%; aprons, 2%; let help, 4%; interest in the things the child did, 4%; indulgent, 4%; intercession with parents, etc., 4%; advice, 2%; looked neat, 2%; cleverness and knowledge, 2%; restfulness, 2%; never got angry, 1%; loved to be with, 7%; preferred to children's society, 7%; no traits disliked, 4; generally liked, 21%.

*Sub-rubric.* Individuals mentioned as specially liked were 45 in number. Of these a grandmother was mentioned 24 times (or by 24 individuals); a grandfather, 10 times; some old woman, 7 times; some old man, twice; an aunt, once; and an uncle once.

*Rubric 3. What Children Disliked in Old People.* 140 returns. Wrinkles, 24%; untidiness, clothes, etc., 12%; tobacco chewing, 11%; tobacco smoking, 2%; snuff-taking, 1%; tobacco in any form, 5%; liquor drinking, 1%; slow and tottering gait, 10%; trembling voice, 5%; slobbering, 4%; eating habits, 3%; forgetfulness, 4%; cross and scolding, 5%; bad pronunciation, 2%; whiskers, 3%; bent form, gums, loss of teeth, 8%; sunken eyes, 2%; matter in eyes, 2%; gray hair, 3%; advice, 2%; kissing, 2%; no traits liked, 2%; generally disliked, 10%.

*Sub-rubric.* Individuals especially disliked, 10%: old woman, 3 times; old man, 3 times; aunt, twice; grandfather, once; grandmother, once.

*Rubric 4. As a Child, what Age in others was Considered Old.* 75 cases.

Average of	24.5 years	53%
Average of	47.3 "	35%
Average of	60.6 "	12%
Total average,	37.3 "	

*Sub-rubric.* Other indications of age besides years. 24 cases. Of these white and gray hair was the sign in 12 cases;



4, confused old with grown ; 5, had no signs of age ; 1, judged by trousers and long dresses ; 1, by a full beard, and one thought that after a certain age a person did not get older.

This rubric may be compared with Nos. 1, 2 and 3, where it is probable from the character of the answers that those making returns have in view in the most of cases a greater age than the total average of 37 years given in rubric 4. It is, however, quite plain that children, although they no doubt discriminate the ages of their companions very keenly and even jealously, have a very hazy idea of the ages of adults. Up to the age of 17 the first of these characteristics shows itself. Seven of those who answered the questionnaire were careful to say they were  $17\frac{1}{2}$  or 17 and so many months. From 18 on there was no division of the years in giving the age. There is of course abundant reason for this in the rapid changes which characterize this period of life.

*Rubric 5. Wished to Live to what Age? (As a Child.)* 110 returns. Live to 100, 20% ; several hundred, 1% ; as far as could count, 1% ; to average of 20 years old, 14% ; to average of 69, 25% ; (*total average of foregoing 111 years, by 63%*) ; live forever, 9% ; no idea how long, 4% ; till end of the world, 2% ; be the last alive, 1% ; very long, 2% ; at 40 (the pleasures of life then over), 3% ; "not longer than" an average of 56, 4% ; when old get little again, 2% ; when mother died, 1% ; extinguished when too old to go school, 1%.

These five divisions may be more concretely illustrated by the following quotation from a return made by H. B., a lady of 33, happily married, with four children. This return is particularly interesting as showing the transition of the child's ideas towards those of adolescence. It is evident that the dwelling on length of life in this case takes the place of dwelling on death referred to in the table on that subject, and comes in at the same age :

When about 12 to 15 I always wanted to live till I was very old. It used to give me great pleasure to count the years by tens, because ten years seemed such an immense long time. In 10 years I'd be 25, and beginning the life I wanted especially (that is, my marriage, which was always the beginning of my life). In 10 years more, 35. It would take such a long time to pass. In 10 more I would be 45, and if I once could live to be 45, and go through the experiences I wanted, having a husband, a home, and children, I felt death would not be a great terror to me, but I felt it would be a terrible thing to be born and live, and not go through these experiences. I used to think (12 to 15) that death would not be so bad if I had my very own, part of myself, *i. e.*, husband and children, to die with, and I feel this yet. When I would try to reflect—now you might die and not have this experience,—it is impossible to describe how terrible it felt to me. I felt it would have been in vain

to be born. But if I reached 45, death would be robbed of its terrors. (I don't have this feeling now, but would like to live to 75 at least.)

After 15 I felt (with a little scornfulness) that it would be *impossible* for me to die—that it was certain that I would have these experiences that I longed for.

At this time these emotions were played on a good deal by religion. I frequently attended class meetings, revivals, etc. My companions were converted and tried to impress upon me that I was not saved. I felt if I was a Christian I would have to make the greatest sacrifices, do without gloves, etc., and would have to influence other people to live good lives, and I did not feel able at this age to do so. But I thought I'll live a good life now, but I'll postpone conversion till after I'm married. It will be so easy to be everything good after one is married. That would be a solving of all questions. Marriage was to be the opening up of my life in every respect: conversion, morality. I felt that I was willing to do all these things when I entered the married state. The texts, "Her daughters shall arise and call her blessed," and "Her husband shall sit on high places," used to thrill me. It makes me smile now—I was so young to be thinking of such things.

At this age and before it, I had no special reverence for old age. I thought it was a deplorable state to be in, and old people were always comparing themselves to their own disadvantage with youthful people—that it was always in their heads. But I used to try to make things easier for them. Knowing that my father (then about 60, and he is still living), had an aversion to speaking of old age, I never liked to have any one allude to it in his presence. When I was very young I noticed how his shoulders stooped, and used to like to take off his boots and put on his slippers. I wanted him to know that I loved him, and this was my way of expressing it. He never used to ask me, but thanked me, saying, "That's the lass!" but yet I never did it for the praise, but to show him that I loved him. I would follow him to the hall door and see that his coat and hat were brushed, and took a pride in seeing him look young. I even brushed his boots so that he would not have to bend his back. The brighter I could get them the happier I would be. The boys, my brothers, wouldn't do it. I used to bribe the boys, give them things of my own, and plead with them to cut the wood, etc., so that father would have no anxiety. I used to try to economize on his account. I did all this with mixed feelings of love and pity, used to sob for his old age. I never experienced anything of this kind with my mother.

After 16, when I was beginning to get introduced to young men, I began to get more selfish, and to think more of my personal appearance, but I could not bear the thought of my father dying. I used to sob and cry often with the thought that my father was old and did not have many years to live.

*Rubric 6. Wished to Live to what Age? (As an Adult.)* 48 returns. Before feeble or very old, 32%; when work or ambition is complete, 20%; in midst of work, 2%; average of 60 years, 16%; to 100 years, 2%; as long as possible, 4%; when old, 6%; never die, 2%; never thought of it, 10%.

*Rubric 7. Aged People's Desire for Life.* 16 cases, of an average age of 76 years. Would not care to live life over, 94%; would like to live life over, 6%; longed to die, 70%;

have not longed to die, 30%; thought most of death in later years, 44%; most in childhood, 14%; life best worth living in youth and early marriage, 60%; not worth living now, 14%.

Illustrative case. Married male, 65 years old, does not believe in future life. Have asked several old people, myself included, whether they would like to live their lives over again if it was to be the same, with the same trials, temptations and struggles for an existence. Most every one says "go on to death." Some think if they had their present knowledge they might try again.

*Rubric 8. How Prefer to Die? (Adults.)* 98 returns. Average age, 22%; short illness, 35%; suddenly, 21%; by lightning, 3%; drowning, 3%; long illness, 1%; old age, 4%; consumption, 3%; when conscious, 8%; unconscious, 5%; with no pain, 9%; ready to meet God, 5%; heroically or in some cause, 3%; surrounded by friends (grandchildren mentioned by two young girls), 23%; at home, 6%; away from those who would feel badly, 1%; at sea, 2%; no preference, 1%. News-holme's<sup>1</sup> notion that the most of people would prefer to die of old age does not seem to be borne out by these returns.

*Rubric 9. The First Impressions of Death, the Grave, etc.* On this topic the returns are remarkably numerous, being 204 out of a total of 226. They are also very full of description, often descending to the minutest detail. 98 of the returns do not give the date of their earliest impression. This fact is of importance in comparing the relative numbers of the unfavorable and favorable mentions of table on pages 93-94, with the curves representing the results in the dated returns. It will be seen that the increased age has increased the unfavorable mentions.

The following condensation of a number of cases, where M. stands for male and F. for female, will give an idea of the material used:—

F.—1. Hearses pretty; wondered why we never went to drive in one; fond of mourning; wanted to have a black dress; grave a place where they put the body till the judgment day, when it was resurrected; never thought of worms. F.—2. Thought God came and took you out of the grave shortly after you were covered up; thought three or four days after a person was buried, he left the grave by an underground passage, and went to heaven in the night time when it was dark and no one saw him. F.—3. Thought it lovely to have a new dress and a long, black veil; always desired to have a doll with a full mourning suit. F.—4. The night a person was put in the grave an angel would come down from heaven and cut the soul out and fly back again. F.—5. Funerals unpleasant because every one wore black; coffins pretty with their dark wood and pretty handles. F.—6. Would look in the shop windows and pick out the prettiest coffin for grandpa when he died. F.—7.

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<sup>1</sup>Vital Stat.

Hated to pass corpses, or even see them; coffins extremely repellent; shrouds dreadful. *F.*—8. Sad when I saw a hearse; feared the pall-bearers might drop the casket; hated coffins for fear of being buried alive. *F.*—9. Thought corpses were wax dolls; must be so nice to ride in a hearse, because one could look out at all sides and see things. *F.*—10. Never afraid of corpses, and always thought they looked so nice and lay so *still*; could not bear to see coffin lid shut; thought coffins were pretty, but hated them for having a cover, so the person could not see out when in it; disliked mourning; people still and sad. *F.*—11. Used to play funeral; one would lie on a lounge, and we would pretend she was sick and go to see her; after awhile she would die, and we would all go and cry over her, and then we would take her by the feet and shoulders and carry her into a corner. Although I always thought it was an awful thing, I often used to play I was dead (when quite alone), just to see how it would feel; I would stretch myself out on the floor, cross my hands, and hold my breath as long as I could; then I would imagine people coming in the room and looking at me in my coffin and talking about me. *F.*—12. Thought clergyman was the dead man. *F.*—13. Crying a pretence. *F.*—14. Relatives' duty to cry till funeral. *F.*—15. Funeral an impressive social function. *F.*—16. Played that the corpse came to life and scolded those who said mean things about it. *F.*—17. Had no idea whatever connected with coffins, shrouds, hearses or the soul; I never gave them one thought. *M.*—1. Hearse nicest wagon at the funeral; wanted to ride in it. *M.*—2. When about 10 I was allowed to ride on a hearse; I have always remembered this as one of the greatest pleasures of my childhood. *M.*—3. Lived near a cemetery, and we children used to play with skulls and bones which were dug out when new graves were made; had an antipathy to the cold of a dead body; at 12 I made an effort to overcome this ridiculous feeling by going up to and touching the corpse of a man who had committed suicide by hanging; I was unwilling to recognize the feeling of antipathy as natural to me. *M.*—4. Thought the women who cried at funerals were "taking on," to make a show and impress people. *M.*—5. Disliked funerals; liked hearse; disliked mourning; liked coffin; disliked grave. *M.*—6. Mortal dread of coffins; horrified by seeing an undertaker lie down in one. *M.*—7. Liked to see box lid lowered and earth shoveled in.

A good many mentioned that they tried to cry, and a great many spoke of curiosity as their dominant feeling.

One of the most striking things that comes out in this part of the material is the apparently unfounded way in which in the same individual some things connected with death, funerals, etc., are favorably regarded, and others put as positively disliked. Of the 98 undated returns, no less than 40 are favorable to some of the items given below, and unfavorable to others; 23 are wholly favorable to everything mentioned, 30 are wholly unfavorable, and 5 are neutral or indifferent. The following figures represent cases :

	Favorable.	Unfavorable.	Played.	Never Thought Of.
Coffin,	9	22	2	4
Funeral,	16	17	12	1
Hearse,	25	16	—	3

	Favorable.	Unfavorable.	Played.	Never Thought Of.
Wanted to ride in, 13	—	—	—	—
Mourning, 11	14	12	1	
Corpse, 7	14	7	2	
Grave, 2	14 included in funeral	1		
Shrouds, 6	7	—	—	

*From the 106 dated reports of first impressions* a set of curves has been drawn, in which the horizontal lines represent cases, mentions, etc., not per cents., and the vertical age in years. What is meant by a detailed and strong impression may be illustrated by the following :

F. When I was 5 years old I received my first impression of death. An old Catholic lady coaxed me to come in and see her dead son in his coffin; I distinctly remember the room and the position of the coffin; she had candles burning on the table; around the coffin there sat about half a dozen women, who were showing their sympathy by weeping and moaning; the old lady took me by the hand and led me up to the coffin; I remember that he wore a shroud; I looked at the face and drew back, as his eyes were not completely closed; I cannot say I was afraid; I think it was more surprise than anything else.

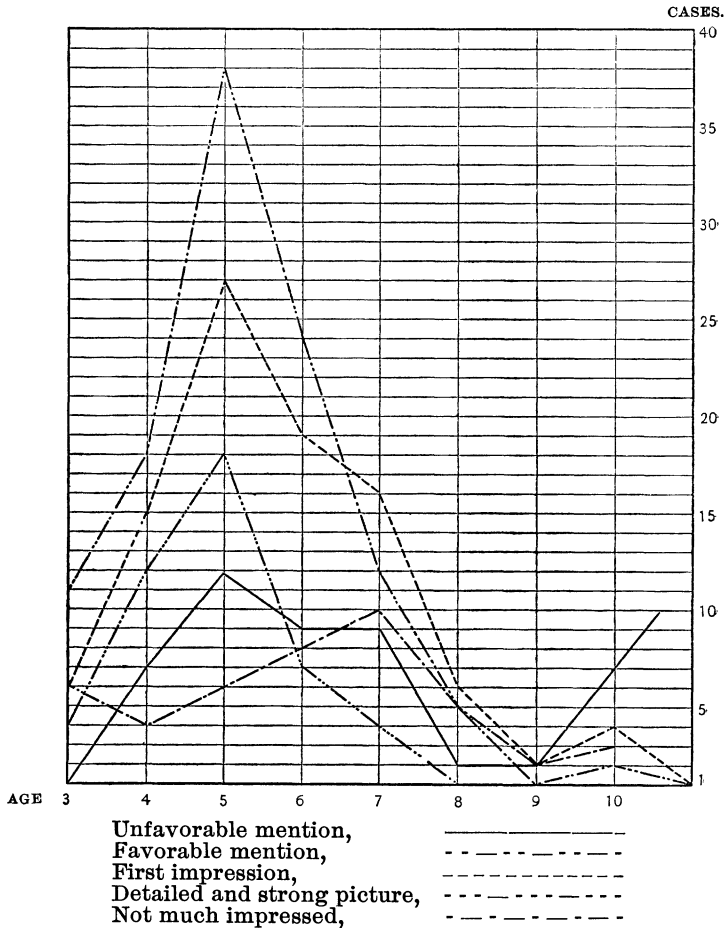
Favorable and unfavorable "mentions" refer to the seven items in the table above, a much larger proportion referring to the dead body than before. It is evident that the number of "mentions" are in excess of the cases. Comparing the area enclosed by the "favorable mention" curve with that of the "unfavorable mention" one, it will be seen how much more numerous the first class is than the second. It will also be seen that the first class has a very decided apex at 5, while the apex of the "unfavorable mentions," although it occurs at 5, yet rises beyond the others at 10. The fact of the apex of this curve occurring at 5 is evidently due to the large proportion of all first impressions occurring at this age. These curves show most emphatically that the age for obtaining the first impression of death is generally at 5, and that if delayed till much after this age, it is much more likely to be an unfavorable one, sometimes giving rise to a horror which is never overcome.<sup>1</sup> The curves representing "strong and detailed impressions," and "not much impressed," support the above conclusion. The impression referred to is always of a very material or external character, and quite frequently visual. The grief of the mourners is not understood. Later on the external impression is not stamped with the same force upon the memory, but other things come in. The only

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<sup>1</sup>Tolstoi's description of a young child's horror at seeing a corpse ("My Boyhood") is certainly not accurate in point of age if intended to represent a typical case.

mention of any grief being felt, is in this later period. It seems that the event meets with a wider psychic irradiation, a fringe which drafts off the concentration on the mere external facts and gives an internal emotion of grief and sym-

106 DATED REPORTS.



pathy, or sometimes horror and disgust. Both the more objective and the more subjective elements must play together in any future experience of death, and since the extravagances, the unnaturalness and morbidity frequently connected with the experience of death are highly subjective, it is surely of the greatest importance, pedagogically,

that the objective element obtain its due reinforcement at the proper age. The complaint of the little girl<sup>1</sup> on being refused permission by her mother to look at a corpse, that she "was six years old and never saw a dead person," has evidently its justification in the psychological constitution of the individual.

The following cases, both dated and undated, taken almost at random, will illustrate these conclusions :

*F.*—1. At 5 my brother died; I cried because the others did; remember great joy on driving to the cemetery at the signs of spring all about; I remember the patches of green grass or winter wheat, and bits of blue sky, but not the burial. *F.*—2. First acquaintance with death at 5, when a baby brother died; I recall how he looked now as he lay in his little white casket; I was not at all afraid, but rather liked the idea of looking at him; he looked to me as if he had fallen asleep among flowers. *F.*—3 (undated). One noon several of the girls from school went with me to see a boy who was going to be buried in the afternoon; I always liked to kiss every corpse, and I did so this day; when I did it all the girls did the same; when they came out of the house they were very angry with me for kissing him; they said if I did not commence it they would not have done it; they told me I had no right to do it, because he had the jaundice and we might get it. *F.*—4. Thought dead people were only asleep, and if one touched them or made a noise, or even talked, they would awaken; but I did not think they would hurt anyone, but only scream, and look and act like a crazy person. *F.*—5. At 6 first saw a little dead girl; was not afraid of the corpse, but was frightened at the darkness and stillness of the room. *F.*—6. First acquaintance with death at 5, when my grandfather died; remember well the darkened room, the coffin, the crying people; it was so strange that I rather liked it; I thought grandpa must like to be in such a handsome coffin, but would get out again when he wished to; I was impressed most by the odor of tube roses, of which the pillows were made; I have never since seen or smelt a tube rose without thinking of grandpa's funeral. *F.*—7. At 4, a pupil in my Sunday school class; a collection was taken for flowers; I was the smallest and laid the flowers on the coffin; after this I always liked to see funerals and corpses. *F.*—8. Death at 3, sister; mother said, "Bessie is dead;" could not realize what she meant, and although forbidden to do so because of contagious disease, I stole into the room and started to talk to her; I commenced to realize when she did not answer, but thought that she (psychic self) had gone away and would soon be back, so I saved parts of all my sweetmeats for her. *F.*—9. Did not know what a corpse was till my loved grandmother died when I was 10; I would not go into the room, although my feeling was not fear; when I heard she was dead, I did not want anyone to see me cry; I kept back the tears until I was alone; then I flung myself on the floor and sobbed to think that I should never see her again; I did not think about the funeral, hearse, coffin, etc., but spent my time watching how each person who came in the room acted; all the time I was putting myself in mamma's place, wondering how she felt, and what I should do if my mother died.

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<sup>1</sup> Mentioned in returns, and reinforced by another similar case.

*M.*—1. At 6, father and two brothers died; it did not seem so horrid as I had heard. *M.*—2. At 4 attended funeral; thought corpse was only asleep; the blinds were down, the people walked softly and whispered because they did not wish to wake the dead; the preacher's text was, "He is not dead, but sleepeth." *M.*—3. Have the most vivid recollections of my first acquaintance with death (6 years); went at the invitation of a playmate to see their baby that had died; my feeling was one of curiosity; I thought the baby looked nice with a large gold cross on its breast; I remember feeling wonder that some women were crying. *M.*—4. First impression of death at 7; was taken to the funeral of an old lady; often heard of dead folk, and shuddered to think of one, and after seeing her I always disliked them.

*Rubric 10. Ascribed Life to the Dead. (As Children.)* 84 cases. Of these 30 cases ascribe smother feelings to the dead; 25, thought that the dead were asleep (sometimes breathing gently); 25, that the dead felt cold (in shroud, on ice, etc.); 16, that they felt rain, damp, etc.; 12, that they felt cramped, tired, wanted to turn, strange that they did not sit up; 7, that they felt lonesome; 11, were afraid that the dead would be buried alive; 6, that they were only pretending; 10, were afraid the dead would awake, jump up and do horrid things, run after them, play some joke; 3, spoke to the dead; 8, were afraid the dead would feel the worms biting and crawling; 7 more, object to the grave on account of worms; 8, feared the dead could not see out of coffin, grave, etc.; 7 more, that the grave was dark; 4, thought that the dead made their way out of the grave, dug, sneaked out in dark, etc.; 2, that the dead communicated underground; 4, that it was funny to put the dead in a coffin when they were going to heaven; 1, would rather have the body go to heaven and the soul stay in the grave; 1, thought the body kept on growing and would become the shape of the coffin.

The following selection from the experience of H. B. (already quoted) will indicate the transitions in the feeling of death from one age to the other, and give a concrete case referring to several previous categories:

About 10 to 14 I was frightened at any one who died; it was something I could not explain, although I used to try to reason myself out of it; I would look at a companion who had died and say: "Well, that was Alice; she saved my life once from drowning; I know there is nothing to be afraid of;" but yet I would have a feeling of terror, and I would shudder when looking at her, and for days after I would be afraid to enter a room alone; I used to go to sleep with my head buried in bed-clothes, frightened that if I would look up I would see the spirit of Alice in the room; to this day I have a similar fear after anyone has died; but it would be different with my own loved ones; I often thought when I was a young wife that it was strange I had this horror; but I liked to dwell on and imagine how, if my husband was dead, I would throw myself on him and clasp him—that I would be jealous of anyone



else—that I would go in and lock the door, and no one should touch or handle, or share the vigils till he left the house forever; I used to lie awake nights sometimes and think this way; I have had no experience of death in my family, but I know this is the way I would feel and act; but all other bodies would fill me with a nameless terror, all but my own loved ones—even I think I would be afraid of my own dear father; not what he is at present, but all that he has been in the past—the life of the man would rise up and terrify me.

Even at the present day when I see a hearse or crape, a shudder arises, and yet I am filled with a pity for the dead body that is going out; a feeling of suffocation and smothering, that the dead body must feel rebellious, overcomes me.

This return naturally introduces

*Rubric 11. Dwelling on Death and Suicide.* This is also a very well-filled category, 67% of the whole reporting. Of these only 7% of the whole state that they never dwelt on death or suicide, the remaining 60% giving answers like the following :

*F.—1.* About 15 I dwelt on death to the greatest extent; often thought of stepping in front of a passing train, drowning, taking poison, jumping from a window; often tried to decide if I committed suicide what way I would do it; often imagined how others would feel if I were found dead; once I imagined they were just lowering the coffin when I raised the lid; these feelings were associated at various times with all three—anger, love and religion; I thought most of these things about 15 or 16 and during revival services; at an earlier age, when I was punished. *F.—2.* Between 13 and 14 I had special spells of dwelling on death; after revival meeting, where were generally preached hell and judgment day, I thought of nothing but death; I came home and divided my possessions; I could not sleep at night; I was worked up so it almost made me sick. *F.—3.* Was very angry because my mother would not let me go on a picnic (at 14); I lay awake a long time at night and imagined I was dead, and that my friends all came to see me as I lay in my coffin; I thought my mother cried and cried and wished she had let me go to the picnic; so I felt revenged. *F.—4.* At 14 to 15, when very angry I used to think I would go and hang myself, at other times that I would jump out of the third story window; then I would imagine the horrified looks and the sorrow of those with whom I was angry, of what they would say, and how they would excuse me and blame themselves. *F.—5.* When stopped from quarreling with my sister, I used to imagine that my mother cared more for her than she did for me; this made me think I would commit suicide and so get out of the way; then I thought mamma would feel so bad, and my sister would never look the same girl again, and people would say, "What a shame that one so young could take her own life." *F.—6.* Angered and mortified by my parents upbraiding me (most about 13), I thought if I should commit suicide or some accident should happen to me, what would they feel and think? but when I imagined them weeping, I couldn't stand it and got as far from the subject as possible. *F.—7.* Once very angry with my mother; I thought, Well, I'll just go and drown myself, and then maybe she will be sorry; but then I thought it will be too late, for I will be dead. *F.—8.* Often after going to bed (when a child) I would lie still and straight, fold my hands upon my breast and im-

agine I was dead; I would think how the people would feel and what they would say when they saw me.

*M.*—1. At 15, often had spells of dwelling on death; how if I should be found dead, what would my friends say? *M.*—2. When angry or in an exceedingly generous or sympathetic mood, imagined myself dead. *M.*—3. At a co-educational school, the question was asked by a young lady, how many had ever thought of committing suicide? There were 11 of us, ranging in age from 16 to 20, and they all confessed they had contemplated it; this lady had asked 50 in the school, and with the same result. *M.*—4. At 14 and 15 I was much attracted by the girls, but was too bashful to say much to them, but I used to plan heroic sacrifices of my life in order to save them or ensure their happiness, thinking they would appreciate me then.

The difference of emotional depth in face of the thought of death between these returns and those of early childhood (rubric 8) is exceedingly well marked. In some cases love and even sexual love is mentioned, but even when feelings of revenge and ill treatment are the principal correlates, the altruistic tendency is quite as evident. There is involved here all along the putting of oneself in the other's place, and an assumption of love on their part which is appreciated by and reveled in by the miserable imaginer. By this logic of the emotions the heart gets back the love from which it seems excluded, and thus helps to cure its psychic wounds. The more intellectual radiation or reflection of *F.*—7, although it would seem to lie directly on the surface, indeed perhaps because it does lie simply on the surface, has only been mentioned once. The idea, too, that these imaginations are only a mere play, and that they would not really like to die, etc., is very rare indeed.

How common such experiences are, and how they culminate in early adolescence, with the awakening of the sexual and altruistic nature, may be shown by the following table :

PERCENTAGE WHO	No record.			
	No record.	In teens.	Below teens.	No date.
Dwelt on death (imagined, etc.)	0	62	11	27
Dwelt on suicide	69	27	1	3
Connect with anger	60	26	3	11
Connect with love	94	5	0	1
Connect with ill treatment	55	28	8	9
Thought others would be sorry for ill treatment	76	12	8	4
Thought how others would feel	38	38	4	20
Imagined with pleasure	92	6	0	2
Refer to as past (adults)	24	71	0	0
Say not yet past, 5%				

*Rubric 12. Present Mention of Suicide. (Adults.)* 65 cases. Suicide never justifiable, 34% ; suicide permissible in certain circumstances, 60% ; sickness or insanity were mentioned as an excuse by 12% ; loss of money or like misfortune by 10% ; wife running in debt, 3% (females) ; to get insurance for starving family a man may suicide, 1% (females) ; going to be hanged, 3% ; sacrifice, pity (Jesus for example), 6% ; loss of friends, 4% ; frequently think of it, 4% ; always prepared for suicide, 4% ; only lack of courage prevents, 3%.

Examples of material :

F.—1. Age, 33. Since 16 have known I might become blind, and am prepared if this should occur to end my life. It has no more meaning to me than any ordinary preparation for any work. I think suicide is justifiable when circumstances make the continuance of life injurious to the health or life of others. If a person is justified in giving his life to save a drowning person, he is justified in preventing a long sacrifice of a useful life for a failure. The responsibility of ending one's life is less than that of producing life under ordinary conditions. F.—2. Age, 19. Suicide justifiable if it were the only way some real good might be done to others. Enoch Arden, *e. g.*, if his wife had discovered him. F.—3. Age, 36. English women in India at the time of the Sepoy rebellion.

M.—1. Age, 17. Justifiable if friends are against you in everything you undertake. M.—2. Age, 25. About 23 was subject to a periodical desire for death. I noticed that these spells usually preceded the expected arrival of a letter from a certain young lady. Usually when thinking of death now, it has a fascination I have to resist by force for fear of yielding to it. M.—3. Age, 30. To counterbalance effect of predisposition to depression, when taking life insurance I avoided those which gave payments in case of suicide. M.—4. Age, 35. Believing, as I do, that the end of life consists in the development of character in self and others, suicide does not appear justifiable to me. This does not prevent me from feeling at times that death would be a welcome relief from the difficulties of life.

*Rubric 13. Feelings when Thinking of the Shortness of Life. (Adults.)* 57 cases. Make good resolutions, 20% ; think of wasted time, 12% ; will be longer in the next world, 12% ; life hardly worth living, 10% ; sad and disgusted, 6% ; troubles grow insignificant, 6% ; life becomes insignificant, 4% ; think of God as judge, 2% ; feel glad, 4% ; feel like laying up treasures in heaven, 4% ; feeling of grim humor, 2% ; a brake on all endeavor, 2% ; wish I had never been born, 4% ; never thought about it, 10%.

*Rubric 14. Diseases, etc., Feared as Children.* 129 cases. Small-pox by 30% ; lockjaw by 28% (9% imagine getting it, 3% were ready with wood, etc., to put between their jaws) ; consumption, 27% ; hydrophobia, 21% ; railroad accidents, 18% ; diphtheria, 16% ; drowning, 15% ; fire, 12% ; leprosy, 8% (imagine getting, 3%) ; earthquakes, 7% ; cyclones, tornadoes, 4% ; lightning, 6% ; pneumonia, 6% ; cancer, 5% ;

yellow fever, 5%; end of the world, 4%; feared to be last one alive, 2%; miscellaneous accidents, 6%.

The intensity of fears follows the following order: small-pox, feared *most* by 18%; leprosy by 7%; hydrophobia by 7%; consumption by 7%; lockjaw by 5%; diphtheria by 4%; cancer, 3%; yellow fever, 3%; railroad accidents, drowning, fire, each, 2%; earthquakes, cyclones, and end of the world, each, 1%.

The reasons given for the fears were: stories heard (news-papers, Bible, etc.), by 14%; isolation by 10%; become like lower animals, 7%; disfiguring marks, 6%; smothering, 6%; starvation, 5%; sure death, 3%; future life, 1%.

*F.*—1. I used to think I would die of consumption because I was very thin. *F.*—2. Feared being struck by lightning. I could imagine the zig-zag flashes cutting a way through the body like a spear and finally darting out, leaving its victim as dazzling light and completely isolated from everything. *F.*—3. Often (more about 7) if my jaws would not move as I thought they ought to, I feared I was going to have lockjaw, and starve to death. *F.*—4. Feared most enlargement of the heart, that it would keep on growing until it burst my body open and I would die. *F.*—5. Leprosy most. Afraid fingers would fall off. *F.*—6. Would worry myself almost sick when traveling, for fear the cars would run off the track. *F.*—7. Afraid of yellow fever. Heard father tell of many people dying from this disease. Would think how dreadful it would be if the people in our neighborhood would get it and would all die, and there would be no one left to bury us. Was afraid of hydrophobia, small-pox, diphtheria, scarlet fever, lockjaw, mumps, typhoid fever, being killed by runaway horses, hurricanes, war, earthquakes, thunder and lightning, of the water in the river rising and drowning us all, of fire.<sup>1</sup> At night I used to imagine I heard the fire cracking and snapping, and expected to see it coming up through the floor, but I never said anything about it.

*M.*—1. Feared greatly scarlet fever, also mortally afraid of consumption and catarrh. When traveling would think of train jumping the track. One of my greatest fears was lightning. I thought the souls of those struck went to heaven on the bolt of lightning.

*Rubric 15. Experience when near Death from Accident or Disease.* 25 cases. This rubric is of special interest on account of the recent article by V. Egger<sup>2</sup> on the consciousness of the dying, which has brought out some correspondence from other authors. M. Egger holds the view that the idea of death strongly stimulates the idea of self. The sense of merit which he admits is frequent in face of death is, he says, simply an epitome of the self. If we are to give any special meaning to the term self, this view is not borne out by the mass of these returns, some slight irrelevant idea, or the thought of others being most frequent. The sense of

<sup>1</sup> Most of these given in detail.

<sup>2</sup> *Rev. Phil.*, Jan., '96.

merit, if from one standpoint an epitome of the self, from another standpoint demands the recognition of others. This last element is most apt to be in the focus of consciousness. On the whole the most of the cases indicate the formation of a fetich or objective symbol somewhat de-centralized from a strong emotion, with which it is nevertheless sub-consciously associated.<sup>1</sup> This fetich is most apt to be some objective fact or sensation.

Drowning. *M.*—1. Thought of nothing but getting out, and if drowned would anybody be sorry, and would I have a big funeral? *M.*—2. All the bad deeds of my life flashed before me (14 years). *M.*—3. Nearly drowned. Thought of a great many things and suffered no pain, but hard or impossible to describe. *M.*—4. Nearly drowned while swimming at 14, but had no feelings about it. *M.*—5. Once nearly drowned (about 8 years). My experience was delightful, soothing, panoramic, and the tug of the rescuer was a harsh note, provoking a feeling of anger at the intrusion. *F.*—1. Once near to death by drowning; was physically afraid and trembled violently, but did not scream. The year before I had not taken algebra, as most of my class had done, and I thought, "Now it does not make any difference anyhow." *F.*—2. Nearly drowned last summer (age, 19); my head and brain seemed to be in absolute confusion; came to the surface once and thought, "Well, if my body is lost, my soul won't be."

Other accidents. *M.*—6. Nearly run over by train (under 20); did not think about anything till after, then pictured the possibility of death—body met at the station, etc.; then a rigid course of introspection to see what good I had done, what opportunities for so doing had been neglected, what evil I had done, and whether I would have gone to heaven or to hell; last, a renewed determination to reconsecrate my all to His service. *M.*—7. Near falling from apex of barn; felt no fear at the time, but was more thoughtful for a few weeks after. Nearly killed by a balking horse; only thought was, "Guess they'll have to get a new teacher." *M.*—8. At age of 24, half way up perpendicular cliff of 400 feet, commenced to reel with sun, heat and exhaustion, and felt like falling; have always been given to quoting poetry in predicaments; here flashed into my brain and saved me the words of Gunzalo, "Now would I give a thousand leagues of sea for one acre of barren ground." I somewhat queerly smiled. *F.*—3. Nearly run over; imaginatively impressed by the horse's hoofs for a week or more. *M.*—8. Shot in battle. Felt perfectly happy.

Illness. *M.*—9. Sick with la grippe (20); thought of meeting God, and did not feel equal to the task, yet, being so ill, it did not matter much to me whether I got better or not; when I got well I felt grateful to God. *M.*—5. (Same as above.) Near death from illness at 22; the danger disturbed me very little; I said, "I want to live long enough to do something in the world, but if Providence vetoes that wish—'Let 'er go, Gallagher!'" The half flippancy of my attitude surprised and shocked me afterwards. *M.*—10. At 22, after an attack of peritonitis, had occlusion of the intestines; my medical knowledge (physician) told me what it meant; it was probable I would die. This did not worry me, but I felt it would be the

<sup>1</sup> Cf. section on Fetichism in author's article, "Sex and Art," *AM. JOUR. PSY.*, Jan., 1896.

saddest thing for my parents, who had given so much of their time and fortune to me; the weaker I grew the less I worried about myself, and only the sadness mentioned remained to some extent. *F.*—4. Near to death lately (36 years); I was more blissfully happy than I had ever felt. *F.*—5. At 24 had typhoid fever; felt very weak; wanted to be let alone; felt it was easier to die than to gain strength. *F.*—6. Been at the point of death several times as result of *angina pectoris* and administration of ether; went (at 28) to a conceited young physician in a strange town to have ether administered, saying nothing about susceptibility; nearly died; first thought on returning to consciousness was, "That young fellow has probably learned a valuable lesson." Once had *angina pectoris* at altitude of 7,000 feet; during intervals of consciousness worried over a small bill that was left unpaid; thought Gabriel would have a good time hunting me up if they buried me in the mountains. During these gaps I have always noticed that all my senses, except the muscular, were very acute.

*Rubric 16. The Child's Notion of the Soul.* 102 cases. Substance, etc. Thought it gaseous, 26 cases; had wings, 17; light, 9; bright, 8; white, 9; invisible, 7; a bird (sometimes dove), 6; a bright light, 3; an angel, or like an angel, 6; no qualities, negative of all, 2; same as conscience, 2; bluish, 2; jelly-like, 1; a something, 1; brown, soft, about the size of a hickory nut, 1; a piece of flesh as big as hand, laid on shelves in heaven, 1; a thin white cloth, with black spots on for evil deeds, and flew around like paper, 1; a pure white ball of cotton, 1; oblong, dark, slate colored, lying across body, 1; small, hard, like wood, 1; an oblong, yellow, thin box, 1; part of Christ, 1; a cloud, 1; could stick fingers through, 1.

Location. In breast, 13; in heart, 7; around heart, 4; in head, 6; all over body, 10; not separate from body, 8.

Shape. Same shape as body, 20; heart-shaped, 10; same shape as body, but smaller, 7; body could be pulled off it, 1.

Capacities, etc. Floated, flew, etc., from body to heaven, 26; went from grave to heaven, 10; God or angels took it out of the body or grave, 7; joined new body in heaven, 1; joined old body in heaven, 1; watched for emanation, 3.

Never thought of the soul, had no idea of it, 14; have yet (as adults) no idea of it or think about it, 3 (females).

Illustrative cases. *F.*—1. Had no idea of the soul as being separate from the body; thought when the person died he remained in the grave for a while, and then got out some way and went up to heaven; it used to puzzle me how they got out without being seen and got their wings in order to fly to heaven. *F.*—2. Soul gaseous and bluish; of no definite shape; went through the body and air to heaven in the sky; all happened in an instant; when it reached heaven it took its place in my body again, as I imagined myself in heaven in bodily form; never thought my earthly body was in the grave. *M.*—1. Soul came out of the mouth, and if the head were put in something that would fit it very tight, the soul would not be able to leave the body and the person would not die.

*Rubric 17. Belief in Immortality, 123 returns.*

PERCENTAGE WHO	In childhood.	16-20 years.	21-40 years.	40-on.
Believe in future life	95	75	63	60
Mention childhood only	—	18	6	10
Do not believe in future life	5	7	31	30
Meet friends in heaven	29	29	27	20
Friends watch over us here, etc.	10	15	18	20
Accept or refer to hell	6	12	6	10?
Refuse to accept hell	2	4	—	—
No reference to hell	92	84	94	90
Heaven, city-like	15	4	—	—
Heaven, country-like	10	4	—	—
Heaven, a room	4	—	—	—
Heaven represented by throne	10	—	—	—
Thoughts run on after death forever	1	5	4	10?
Thoughts limited, difficult, close with judgment day	4	29	9	—
Heaven in sky, etc.	10	—	—	—

As the right hand column contains only 10 cases (more old people speaking of this life than the next. Cf. Rubric 7), the results are not very certain, except when they continue tendencies already shown in the first three columns. In the first column all the returns are represented.

Illustrative cases. *F.*—1. As a child I thought heaven was a place where they did nothing but sing, and as I could not sing I did not want to go there.

*F.*—2. Age, 22. Have a feeling that at times our friends hover around us; often felt that my mother was near me.

*F.*—3. Heaven (as child) a beautiful bright place, with carpet on the floor and no dirt.

*F.*—4. Somewhere between earth and heaven there were two paths, one leading up to a gate, another leading away from it; thought the soul in the form of a mist came up the path to the gate; there stood the judge; if good on earth they could go in; if not, they must go by the other path until they came to a large hole, and the soul fell through this into hell.

*F.*—5. Age, 17½. Thoughts are not very clear about the after life. . . . Hardly think we are to go there and just fly around like birds, but rather everyone will do the things they love best in the way of art or music, or anything of that kind; each will love all equally, and so there will be perfect happiness. . . . Can't realize that happiness goes on forever, and ever never changing; seems as though there must be an end to it sometime.

*F.*—6. Age, 21. Used to think, and do still, when I do not look at it scientifically, that heaven is up above the blue of the sky.

F.—7. Used to wonder what a person who was twice married would do in heaven.

F.—8. Age, 21. Idea of living on forever with my own personality unbearable; I worried most about this at 10, but at 20 I heard an address on immortality; the feeling of its unbearableness came back; it was as if I simply could not endure it—better total annihilation, anything, than this continual going on and on; at present I do not believe in a future life.

F.—9. Age, 20. I used to think of the one who died as still in the grave, while taught the contrary; believe the soul departs to be with Christ.

F.—10. Age, 17. Always thought meet friends hereafter, bright and sparkling (fixed), crowded with people dressed in white, with gold stars on head; every one in heaven very gay.

F.—11. Age, 18. Believe fixedly in an eternal future in the presence of God; I think when a person is dead his thoughts are at an end, *i. e.*, *he does not think the way he used to*, but have no doubt the mind goes on in another life.

F.—12. Age, 36. Little feeling about friends who have died; feel that death ends all; if they have progressed we shall be outgrown; if they remain stationary they are outgrown.

F.—13. Age, 17. Imagined angels flitting about in long robes and watching the people on earth and carrying dead people to heaven; I *always want to think* that those who have died are watching over, protecting and guiding those on earth.

F.—14. Age, 18. Thought only a very few went to heaven, those who had been very good; thought heaven was like a large church, and that the people were clothed in white and sang to God, and He communicated with them; I think now that when we go to heaven all things which by faith we accept will be openly revealed to us by God, only in another way, and not as we now see them; the future we are told by God will be one of joy, but that joy will be different from what we now consider joy.

F.—15. Age, 19. Used to think every one who died went to heaven; don't now; angels spent their time singing, sitting around a throne and listening to Jesus; thought they looked after us, and were pleased when we did right (14 to 19); think of friends as happy and not far away.

F.—16. Age, 17. As a child I never truly wished to go to heaven, although I tried to think so; though I like singing I thought it must be tiresome to sing forever; now I think it is a place where we will be supremely happy, do everything we want to, but our wants will be so changed that we will wish for only that which is right; sometimes I have doubts concerning heaven, etc., but I should never care to speak of them to anyone whom I knew could not answer me, for if they could not it might strengthen these doubts, and would surely do another no good; I cannot in the least grasp the idea of eternity, and seem to think of it as only a short period.

F.—17. Age, 19. As a child believed in future life, etc., but at 15, when I began to think of such things, I had my doubts for a time; now my deepest thoughts and feelings tell me there is a future life; thoughts run only shortly after judgment day; heaven a great glittering palace paved with gold and jewels; souls looked just as they did on earth, etc.; I now feel uncertain what form my friends will have, or how we shall know them.

F.—18. Age, 17. Always believed in heaven; think of the body



in the grave for only a short time, then of the judgment day; I imagine when I die everyone else will die too, and judgment day will be soon after; heaven not very large, about like my room, only there was no floor, only clouds and God's throne, which was made of gold; people as on earth only floating around; there are times when I think heaven must be dull, and am puzzled when I think of the length of eternity.

*F.*—19. Age, 18. Gate of heaven large, beautiful, pure white, so bright it hurt your eyes to look at it; guarded by two angels, one outside with a large sword, and the other inside with the key which unlocked the gate; when a person died his soul flew to the gate, etc.; if the person had been bad, refused admittance, and the clouds opened up and he fell into hell.

*F.*—20. Age, 18. I imagined heaven was a big place, and that it was made of gold and marble; in the middle of it was a large throne in the shape of a circle; it was made of steps; on this throne sat God and Christ; before God there was a big book, and in this He had the name of every one in the world; when they did anything wrong He would put a mark opposite their name, and when they had so many marks, either good or bad, they died; Christ pleaded with God to let them come to heaven; on the steps of the throne sat a lot of angels playing on horns and harps; all around the throne were coffins, and in each sat an angel; all were singing, and they never stopped.

*F.*—21. Age, 17. I never *will* think and never did think of a future life, because the answer to all questions which arise is, "I do not know; no one knows;" after death my thoughts run only to the funeral; I never can think of what will happen to the soul, because I do not believe there can be a hell, although my religion teaches it, and I cannot imagine heaven.

*F.*—22. Age, 17½. My present ideas are entirely different; I think now the soul goes to paradise, and will go to heaven after the judgment day; paradise is very much like heaven, only not quite as beautiful; in heaven there is a river, and beautiful trees and flowers on its banks; but I seldom try to think just how heaven looks, because I know that "eye hath not seen, nor ear heard, neither hath it entered into the heart of man the things that God hath prepared for them that love Him;" I pretend that I am sitting on the bank of the river with Jesus alone and telling Him how happy I am, and He is telling me why He sent certain troubles to me, and how they made me better; I know I will have a harp and can sing praises to Him; my thoughts thus run away into eternity; . . . . I think the angels will minister to us there as they do now; . . . there is one question that bothers me, and that is, will mamma or my step-mother be papa's wife there? and what the one will do who isn't; . . . . I send messages to my mamma when I say my prayers, for I know that I can talk to God, and He can talk to mamma. (Father a clergyman.)

*M.*—1. Age, 33. Belief in future life and in recognition after death have been strengthened by the death of my little boy; I know that this is no intellectual evidence, but it is evidence that any heart will weigh well before rejecting; surely love of parent for child is a *real* thing, as real as the things we touch or taste; . . . . I see no reason why my love for my dead boy, and my desire to be reunited to him,

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<sup>1</sup> Yet she often imagines that she will talk to Jesus and He to her, etc.

may not postulate the very existence of the objects towards which they are directed.

M.—2. Age, 65. Feelings have changed very much in regard to the future state (a phrenologist told me they would); can not think now that the soul can exist separate from the body, which will be decomposed in nature's laboratory.

M.—3. Age, 77. I have always believed in a future life—a blessed life for the true Christian, and a state of wretchedness for the impure in heart.

M.—4. Age, 35. Feel as if departed friends were near at hand looking down from above or just behind me, and interested in everything I do, more so than when alive; I like to think of them, and wonder what they think of what has happened since they died.

M.—5. Age, 35. Thought how sad it was to leave this world; never could get up interest enough in the future world to make me want to know more about it.

M.—6. Age, 25. In childhood immortality a necessary belief, and would have preferred hell to annihilation; at present, belief in immortality plays a very small part in my experience or motives; I leave it indefinite, though I rather *feel* it is true.

M.—7. Age, 25. As a child had the usual orthodox idea of a future life; later I lost belief in a future life, and have no desire to believe in it now for myself or for my friends.

M.—8. Age, 31. Fluctuate between the speculation that our elements are dissipated in death and a hazy hope that if we achieve self-knowledge in this state we may survive without losing identity; have lost only one friend by death, and I confess that I *feel* he survives in spirit, but I do not believe it (I do not mean that I believe in the contrary).

M.—9. Age, 26. During the funeral of my father I felt for the first time a certainty of meeting him again; about 17 the question of immortality was a favorite subject of reflection and reading; I became more and more satisfied that there was a life beyond, although nobody could demonstrate it; this was a spiritual but visualized existence; I saw myself with dear friends and with the great and good of all ages; wondered if Socrates and Homer would care enough for me to allow me to be near them; the death of a dear friend about year ago has profoundly affected my life; it seems as if a part of myself is gone, and that I shall never recover my wholeness until I am with him again; my disposition has changed, and I have lost confidence in my own abilities, but I have a deeper sympathy, and love friends more.

M.—10. Age, 30. The chief objection to the belief in immortality made itself felt in the fact that abortions, premature births, and deaths *intra partum*, do not cause the feeling of immortality; . . . the origin of life has been the greatest objection to my belief in immortality; my own life and my experience with so many dying and dead people since, have only confirmed my attitude, with which I feel perfectly happy, and which seems to me to lead me to a better and more rational life than any other doctrine; the only regret that I have is that I was allowed to work it out by myself with much loss of time and energy, and could not avail myself earlier of it.

M.—11. ———. No definite notion of future life; "forever," "eternity," seemed absolutely impossible; the idea painful; eternity presented itself visually as a vast expanse of unobstructed territory, bounded on the outer edges by a rim of forest trees.

*M.—12.* Age, 37. Never had belief in the heaven of the Sunday school pictures; I held the fables of literature in precisely the same seriousness as the stories of the Sunday school teachers; they seemed to me to be beautiful and good, but I hardly knew whether grown-up people meant us to really believe them; I never heard religion spoken of irreverently as a child.

*M.—13.* Age, 34. Always believed in future life, only momentary doubts or fluctuations; have studied, thought and preached on the subject, but think there is no proof; I *feel* that it must be true from my faith in God; can't imagine *time* in future state; never fancied much about heaven; expect to be greatly surprised by the nature of spirit life, but expect reason is immortal and the same; expect to see friends with *mind* only, and to *think* with them and enjoy their spirits.

*M.—14.* Age, 35. Have given up early idea of future life, but I think somehow spirit may be eternal, but I don't know whether the finite spirit will preserve its identity in the future state, or whether in some way it may be resolved into the infinite spirit; I like to think of both these possibilities, and of a third, viz., that the influence of one's life will continue to affect future generations of mankind.

*M.—15.* Age, 20. Sleep in grave till resurrection, and yet in some way believe to some extent that persons who are dead can know what we are doing; have heard, *e. g.*, a mother's parting words to her boy, "I will watch over you from heaven, my son;" heaven bright, no night, everybody joyous, golden streets; sort of ancient houses to live in, all through very beautiful; angels flew around all over world at command of Christ, not doing anything else, singing and playing a kind of harp; often imagined myself in heaven and looking down on earth and see the people I knew walking around.

*M.—16.* Age, 19. Feel death is a change for the better, but of that which follows death I find it impossible for me to think; I think we will meet our friends after death; I used to think heaven was a beautiful place, where you spent your time enjoying the different pleasures of life; I feel that our friends are around us endeavoring to aid us through life.

*M.—17.* Age, 26. Till 14 believed vaguely but confidently in a God and a hereafter; to-day, "If there is a God, the man who does the best he knows how here may expect some kind of a future life, in which he will know God better, and this existence will be in many ways better than the present; if there is no being above us, yet it will be better for himself and for others if each person does the best he knows how."

From a general view of the results of the questionnaire, we cannot fail to realize what an important element in the consciousness of mankind is the question of death and the problems which naturally arise from it. At first appreciated rather superficially and coldly by the child, the development of adolescence with its emotional crescendo adds an immense radiation of feeling to the objective facts, and at this age, rather than in later life, or even in old age, is found the most frequent dwelling upon these subjects. An ideal curve of the averaged thoughts and feelings on the subject of death and its radiations, during a lifetime, might be drawn, as rising to

the age of 5; dropping slightly and rising again to a much greater height at 14 (table), continuing with a slight fall for five or six years, falling as the practical side of life claims attention, to rise again slowly with increasing age. (Rubric 8.)

*Immortality and the Funeral.* With the fully developed concrete conception of death, there is evidently deeply associated on the one side a fringe of radiating ideas, and on the other the most elemental emotions of our constitution. At one moment an organized body, energetic, incalculable, awakening all kinds of reactions in our minds, is in the next simply a mass of senseless clay. All our feeling of continuity, of persistence of energy, as well as our feelings of love and sympathy, are shocked and outraged in proportion as we realize the facts. Death, the rude irony of its comment on individual life, its cruel separations, has been the tragic background to all the self-conscious development of man. "Why was I born to go through it all?" "I cannot bear to think of it," "I would rather never have been born,"—are typical of a number of our answers on this subject.

From the smothered sob which it has been said lies at the root of all religion<sup>1</sup> to the mother who still hears her dead child calling for her, or wraps a stick in baby clothes and carries it next her breast, death has shown itself to thousands as the very type of evil, the great imperishable blot on life. If we would live, however, it is necessary to be reconciled in some way to this great fact. Mystics have denied or glorified it, poets have covered it with tender words, calling it sleep, and crowning it with flowers; stoics have harshly dismissed the idea, or bitterly welcomed the thing itself as at least the end of its own fear. All of these tendencies are shown in our returns, but among those answering there is no reconciliation more frequently mentioned than the idea of the future life. In this respect the last two rubrics are more important than any of the others. In the ideas on the soul and immortality, we have summed up or represented elements which exist under many of the other heads. The association of growing old with death and the future life is one that is quite frequent. (Rubric 1.)<sup>2</sup> When a belief in immortality is reached, it evidently conditions the conception of suicide. The grave is not rarely looked on as the gate to heaven. The ceremony of the funeral, the weeping, etc., is looked on as "funny" by many children, and with astonishment by one

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<sup>1</sup>Cf. "God is an unutterable sigh lying in the depths of the heart." Sebastian Frank von Wörd, quoted by Feuerbuch, "The Essence of Christianity," p. 121.

<sup>2</sup>"Let age approve of youth, and death complete the same." Browning's "Rabbi Ben Ezra."

adult of our returns, in view of the belief that the person has gone to heaven. The ceremonies of the funeral itself are frequently conditioned by ideas of the future life. The ancient Christians "testified their abhorrence of pagan customs of cremation by depositing the entire body in the ground."<sup>1</sup> Church burial has a similar significance. In Rome on their arrival at the church vault, bodies have their fine trappings taken off, and are piled one over the other, without a rag to cover them, until the vault is filled, when it is bricked up and left for fifty years.<sup>2</sup> From the mere fact of the wealth of material which it subsumes, the conception of immortality must be regarded from the psychological standpoint as at least a far-reaching synthesis of the imagination.

Perhaps because of its many sided origin there are very few ideas which have been more subject to various interpretations, and even to double meanings than that of immortality. Many seem to use it simply as a metaphor (as it may be Dante used heaven and Beatrice) for the undying ideals of the race, while others believe that not a nail or eyelash shall be lost when the body is awakened in a future world.

Much philosophy seems to have this idea as an all-transforming *arrière pensée*. Neoplatonism and Thomism, with the modern forms of scholasticism, are in evidence here. Plato has perhaps been unjustly drafted in to support the theory of individual immortality, although there are many passages suggestive of this idea, as Pfeleiderer shows. According to Teischmüller,<sup>3</sup> however, Plato's ideas on this point are the same as those of Aristotle, although in a less developed state. The problem of Aristotle was of course concerned with universal immortality, the individual psyche dying with the body. With Plato senescence, death and immortality were so closely connected as to be identical in certain phases. Philosophy, as has often been noted, was to him a continual meditation on death. This meant that philosophy was a senescing or discarding of the material elements of individuation by reflection or meditation (method of generalization), which resulted at last in the "idea," which is immortal. To this, of course, there is nothing to be objected. It still takes place every day (if time can be applied). But for the individual as such, it is quite as justifiable to say that this immortal "idea" is death as life.

Kant, as is well known, based the necessity of immortality

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<sup>1</sup> Tegg, "The Last Act," p. 68.

<sup>2</sup> Tegg, *op. cit.*, p. 125.

<sup>3</sup> *Geschichte der Begriffe*.

on the feeling for justice and self-completion, and in order to satisfy this demand he postulated the existence of God. Runze<sup>1</sup> points out that this conception of justice has been a more permanent historical motive than either the wish to live or the intellectual difficulties arising out of the conception of death. In days when enmity was wider spread, we find hell more popular, and almost a necessity to present satisfaction. In some cases, indeed, the joys of heaven were to consist partly in listening to the howls of the wicked, *i. e.*, other people who are offensive to the imaginer. The period of the foreign oppression in Judea before Christ, and the middle ages with their numerous wars and pestilences in presenting death in its most cruel and unjust forms, naturally resulted in the radiated conceptions of the future life taking a revengeful form. Jonathan Edwards in "The End of the Wicked Contemplated by the Righteous ; or the Torments of the Wicked in Hell no Occasion of Grief to the Saints in Heaven," says, "When they have this sight it will excite them to joyful praises." "The damned and their miseries, their sufferings and the wrath of God poured out upon them will be an occasion of joy to them." Andrew Welwood (1749) says, picturing the future, "I am overjoyed in hearing the everlasting howlings of the haters of the Almighty. What a pleasant melody are they in mine ears! O, eternal hallelujahs to Jehovah and the Lamb! O, sweet! sweet! my heart is satisfied. We committed our cause to Thee that judgeth righteously, and behold Thou hast fully pleaded our cause and shall make the smoke of their torment forever and ever to ascend in our sight."

The philosophy of Fichte is very full of assertions and arguments in favor of individual immortality. The theory of Monads (Leibnitz), and modifications of it as held by Lotze, Krause, Pfleiderer, etc., lends itself naturally, as does the most of dualism, to the idea of a future life. The philosophy of Hegel, like that of Aristotle, seems to dissolve the individual at death.

Mosaism is remarkable in the lack of support it gives to the future life, as, indeed, is the most of the Old Testament. Contact with the Persian ideas during the captivity seems to have awakened this longing in the later Judaism.<sup>2</sup>

The teaching of Christ was certainly not markedly eschatological, the most characteristic passages having been drawn from Him only in response to caviling objectors. "The king-

<sup>1</sup> *Op. cit.*

<sup>2</sup> The oft-quoted passage from Job is translated by Rünze, *op. cit.*, as follows: "Though after being flayed, worms destroy, yet in my bare (or skinless) flesh will I recognize (or acknowledge) God."

dom of heaven is now among you." The oneness of man and God was perhaps the pressing message of His best period.<sup>1</sup> To this "here and now" doctrine the Christianity of the middle ages presents a striking contrast.

Recent orthodox Christian writers show an increasing tendency to drop the notion of a direct continuance of the soul at death as due to Greek thought rather than to Christ, and to rely entirely upon the resurrection, which is to occur at the end of the world, and in which both soul and body are to be recreated. This, as Rev. Dr. Laidlaw,<sup>2</sup> *e. g.*, claims, is a view in harmony with modern psychology and with the revelations of the Bible.

On the other hand, from the standpoint of individual feeling, a considerable support is offered to the idea of immortality. In moments of greatest peace and happiness, an *Ewigkeit*, a feeling of eternal here and now comes over the soul, in which we find ourselves entirely absorbed with the present, and indifferent to or careless of death. Such a consciousness is fostered by all the higher services of art, religion, and the enthusiasms of love and noble work. It is not in these periods a question of the future, but the present is all sufficient and eternal in itself.

But when this feeling does not exist, and when we adopt the lower *jenseit* point of view, with this natural dualism is it not right and reasonable to carry with us a corrective derived from the higher state of feeling and project the idea of eternity into time? This Platonic lie, this illusion rather than delusion<sup>3</sup> has at least been the means of safety and psychic wholeness to thousands of the human race. Not from the technically philosophical standpoint, but from the artistic one of gaining the best and most harmonious effect of the elements within our control, from the standpoint of feeling and health, does this conception find one of its best supports.

In harmony with this view it is necessary to point out that the great fact which all these notions of immortality are intended to explain, and which they at least succeed in radiating, is the human experience of death. As Tylor<sup>4</sup> says, "Death is the event which in all stages of culture brings thought to bear most intensely . . . on the problems of psychology." As shown in our returns, death is on its first presentation to the mind almost unintelligible, and necessarily suggests some conception of continuity. (Rubric 9.) This is no doubt due in part to the presence of the dead

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<sup>1</sup> Cf. Keim's "Life of Christ."

<sup>2</sup> "The Bible Doctrine of Man," 1894.

<sup>3</sup> Cf. the standpoint of Alden in "A Study of Death."

<sup>4</sup> "Prim. Culture," Vol. II, p. 448.

body, so strangely similar to its living counterpart. If death had involved a sudden material annihilation, the suggestion of continuity would no doubt have found much less hold upon the imagination. The conceptions of the lower races and the original ideas of children are triangulated almost entirely from the sensuous presentation of the dead body.

But with higher brain development and greater powers of representation, although still founded upon the primitive basis which normally should remain a part of the most advanced individual, there comes in another more important element. The dead body is not the only thing which has to disappear. We, who are yet alive, and have come in contact with the departed, carry with us impressed upon our minds certain ideas, trains of associations, complex reactions, which are capable of healthy action only in connection with the enemy, friend, hero, or loved one, who is now no more. It is necessary that this associative knot, or the brain region underlying it, should be gradually released and its energy radiated into other paths. Here the conception of immortality in suggesting the analogy of a journey, etc., assists in producing this result. The conception of meeting friends in heaven, which, as our returns show, is such an important content of the idea of future life, is felt in greater force immediately after their death, and gradually diminishes with time. The difficulty of running on in thought beyond a very few immediate events, such as the welcome, the judgment, etc., which, as our returns show, is in a proportion of 4 to 1, shows another side of this same question. On the whole, immortality, as reported in the present data at least, is a great deal less concrete than the present life. It is in fact a weakened repetition of the present, and as a weakened repetition tends to irradiate, dissipate, or discharge, the ideas which necessarily arise in the mind because the physical substrate or psychic mechanism, once formed, is but slowly modified in response to new conditions. This senescence and death of our own qualities are the natural consequence of the death of those whom we have known. Even if the idea should not gradually disappear, as we shall see later, it is at least (to say nothing of the ontology of the matter) a better economy of vital forces that it should be localized in the future and some distant place than that it should be ready to appear at any place and time.

But it is equally necessary to note that the idea of immortality has never been a perfect means of irradiation. There is still a very large residue of feeling, sometimes the greater moiety, which lingers round the body. The natural ascription of life to the dead still retains its hold upon us, even in face of a belief in immortality.



Here we may note as a very basal radiation of the experience of death the ceremony of the funeral. This ceremony, ostensibly undertaken for the benefit of the dead, just for this reason, in reality succeeds in focusing the associations connected with the departed in a suitable manner upon certain definite objective events. The bald intellectual perception or recognition of death does not sufficiently impress us with the reality of departure. The oration, which sums up the life and virtues of the deceased, the slow hypnotic movements, the solemn music, the measured tread, as well as the necessary expense which these entail, impress the imagination with the reality of the whole event, have a cathartic effect upon the emotions, and thus give a certain discharge to and assist in "reefing in" the associated ideas which naturally linger round the bodily presence of the dead. When these rites are the keys of large emotions, such as love, the irradiation is all the more important, and is powerfully assisted by the natural ritual of tears and sobs.

When for any reason this irradiation or discharge has not been accomplished, the centres or pathways connected with the old life, although out of connection with the present, are more liable to remain active, and thus become morbid and reactionary.

Here we enter upon ground which has of late awakened the greatest interest. The phenomena of second life treated by Benedikt (pamphlet), the auto-mimesis of W. Smith Baker, as well as a good deal of the current imitation theory of Royce and Baldwin, the double personality of Binet, Janet and Charcot, the hypnotic therapy of Krafft-Ebing, Hammond, Mœbius and Strümpel, the Dr. Jekyll and Mr. Hyde of some moralists, the conversion theory of Dr. James Leuba, and still more illustrative for our purposes the articles of Breur and Freud,<sup>1</sup> have their origin in similar conditions. These latter authors claim that the ordinary hysteria is quite analogous to the severer traumatic forms, both depending upon the non-healing of psychic wounds. Retention-hysteria is a term used by Freud to designate cases where often by strong compulsion of the will, the mind is so strained that although an objectionable idea is banished from consciousness, it has in reality been retained unconsciously and is the more dangerous since out of control of the other normal reactions. As he shows by many cases, this idea is capable of coming up in another form as a fixed idea or impulsive act, which seems to the patient to be entirely objective, and whose connection with his former conduct and experience may be quite unknown to him, but capable under hypnotic treatment

<sup>1</sup> *Neurologisches Centralblatt*, '93, Nos. 1, 2; '94, Nos. 10, 11.

of being revealed to the investigator, and frequently susceptible of cure. Cases of this kind are not infrequent, and especially in connection with the sexual life, whose morbid phenomena are so largely a matter of faulty radiation. A couple of his cases may be cited. One, of an employee who, after receiving ill treatment from his chief, had hysterical attacks, during which he did not speak or show any signs of hallucination, and of which he had no memory after passing through them. Hypnotized, however, and the attack thus occasioned, he revealed that during this time he lived through the scene where his master had attacked him on the street and struck him with a stick, while he was without means of obtaining justice or redress. Another, of a young wife who came to the physician complaining of an irresistible impulse to stab her 6-year-old only son and throw herself over the banister. She evidently honestly described herself to her physician as not being a woman of amorous tendencies, and as satisfied with her married life, but under hypnotization complained bitterly of the unhappiness occasioned by unsatisfied desires, and in this way accounted for her impulse to suicide.

In many of these cases the suggestion, while in the hypnotic state, of justification, or of carrying out in some way a natural reaction of the emotional condition, has been found to remove the morbid phenomena altogether. This cathartic method of treatment evidently points to the existence of a sort of morbid "pocket," or detached associational group, which thus becomes connected with a curative outlet for its activity.

Three of our returns on the subject of death report comparable phenomena. One, of a gentleman, afterwards a medical man, who claims to have seen the ghost or image of his uncle appear to him at night just before going to bed and when he was not thinking of him at all, although he had shortly before heard of his death. Another, after traveling some distance to see his mother, was too late for the funeral, but is positive that in broad daylight he saw his mother coming along the path towards him.<sup>1</sup> The third case is that of a gentleman who had just returned to his own home many hundred miles from the bedside of his mother, who was not expected to die for some time. She, however, died suddenly shortly after his return, and he was unable to be present at the funeral. Several nights after receiving word of her death, and without any special dwelling upon the subject, he was troubled with heart-rending dreams, in which he represented the body of his mother being torn from the bed on which he

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<sup>1</sup>Cf. the file of similar cases reported by the Soc. for Psy. Research.

had last seen her, and dragged shamefully around the room. It may not be too much to suggest that in the cases described, since they were single cases in the experience of the individuals, the funeral might very probably have tended towards the prevention of these slightly morbid phenomena. Hedge<sup>1</sup> thinks that a study of the records of apparitions shows that they occur generally in daylight, and "that the best authenticated cases are those of living persons or persons *in articulo mortis*, or recently departed, and not of persons long deceased."

The naïve ideas of primitive people as revealed both in their conception of the soul and in their burial customs, which are much more than with us associated together, are most easily explained on the supposition of some such psychic mechanism as we have described. The Matambo (negro) widows, for example, "have themselves ducked in the river or pond to drown off the souls of their departed husbands who might still be hanging about them, clinging closest to their best loved wives."<sup>2</sup> After this ceremony they marry again. Some tribes drive a nail through the skull to keep the body down.<sup>3</sup> The burning of effigies when a man has died at sea or at a distance, is a common practice. In the graveyards in New England gravestones may often be seen in memory of those who have died at sea. Frazer<sup>4</sup> gives an account of an old historical custom that when a man turns up later on, he is not permitted to enter at the door, but must come down the chimney, and is clothed and fed like an infant for some time after. With the Iroquois a speech of condolence is made to the body of the dead chief, after which occurs the installation of his successor.<sup>5</sup> With the Algonquins a public address is also made to the body at burial.<sup>6</sup> Some Indians believe that the tears shed for the departed go to the other world. A child burdened down by the weight of a full tear-mug appears to her mother and begs her to cry no more.<sup>7</sup> The material buried with the dead are generally supposed to make him contented with his future life, and thus relieve the living from anxiety. The hell shoon of northern races were intended to expedite the departed in

<sup>1</sup> "Ghost Seeing," *N. A. Rev.*, 133:286.

<sup>2</sup> Tylor, *op. cit.*, Vol. II, p. 23.

<sup>3</sup> James G. Frazer, "The Primitive Ghost and His Relatives," *Pop. Science Mo.*, XXVII, 668.

<sup>4</sup> *Loc. cit.*

<sup>5</sup> Horatio Hale, "The Iroquois Book of Rites," *Phil.*, 1883, p. 60.

<sup>6</sup> Tylor, *op. cit.*, Vol. I, p. 481.

<sup>7</sup> Bastian, "*Eth. Forschungen*," Bd. II, p. 333.

his long journey, and thus helped to impress the imagination with his increasing distance from the living. With closer observation and a better discrimination of objective and subjective facts, these customs become more consciously symbolic, and thus show themselves all the better as radiations. Tylor<sup>1</sup> thinks that the custom of offering gifts to the dead has decayed. The modern Hindoo, for example, presents a small piece of woolen yarn to his dead parent and says, "May this apparel made of woolen yarn be acceptable to thee." The Chinese have reduced their sacrifices to a paper basis. For the benefit of their parents, especially, they burn mock money, "paper houses replete with every luxury,"<sup>2</sup> and other representations of everything supposed to be necessary for future existence. Paper is used to make the boats, which are furnished with candles, sent to sea and watched till they disappear, at the Japanese Festival of the Dead, or Feast of Lanterns.<sup>3</sup> Tylor says<sup>4</sup> that in "modern centuries the Japanese borrow money in this life to be repaid with heavy interest in the next." An inartistic custom of this kind must tend to break up the whole ritual.

At the present day the windows are left open after death for the soul to pass, and the body is carried out feet foremost, or with his face away from the door, a custom, of which although the meaning is now generally unknown, originated in the idea of preventing the dead from seeing the way back again. For the same reason in Ireland the body is frequently carried to the grave by a circuitous route. Among certain negro tribes a hole is made in the wall, out of which the body is carried, and which is afterwards carefully stopped up. Sometimes the body is run rapidly round the house three or four times, after which his ideas of locality are supposed to be uncertain.

When these discharging radiations did not occur, the association knot made itself felt in the seeing of ghosts and other similar phenomena. The ghost of a body which was unburied, or buried without the funeral rites, was believed by many nations to haunt the relatives of the deceased. According to the classical story, Eukrates' wife appeared and demanded the sandal which had not been burnt. The story of Periander and Melissa is similar to this. With the Iroquois, the soul remains in the neighborhood of the corpse and is restless till burial. In Brazil, the soul haunts the survivors

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<sup>1</sup>*Op. cit.*, p. 492.

<sup>2</sup>Tylor, *op. cit.*, p. 493.

<sup>3</sup>"Lafcadio Hearn," *Atlantic Monthly*, 68:382.

<sup>4</sup>*Op. cit.*, Vol. I, p. 491.

till burial. With the Acheron, the unburied wander restlessly around. With the Slaves, the soul flies around till the body is burnt.<sup>1</sup>

Those who had made a great impression on the community were of course the most difficult to keep down, and special ceremonies had to be undertaken. The followers of Attila, for example, turned aside the course of a river, buried him in the middle of it, and turned on the water. Murderers, even in recent times, were pinioned to the ground by a stake driven through the body.

The very frequent conception of three or four different souls shows the difficulty of radiation under one idea. These souls come in just where the old associations connected with the dead would be touched upon by various objective facts or conditions of the environment. With the Siamese one soul stays in the house, one in the cloister, one in the wood, and one wanders around. With the Fijians, the shade goes to the under world, the bright spirit remains by the body. With the Dakotas, one soul remains in the village, one in the air, one goes to the spirit land, and one remains by the body. With the Khouo, one soul dies with the decay of the body, one remains in the race to be born again, one is taken by Bura, and one wanders around. With the Malagese, one goes in the air, one dies, and one haunts the grave.<sup>2</sup> The Latin, *spiritus*, *manes*, *umbra*; the Greek, *psyche*, *nous*, *pneuma*, and the Egyptian, *ba*, *akh*, *ka*, *khaba*, or soul, spirit, life principle, shade, played a similar part in their mythologies.

*Death, Altruism and Sex.* As the returns from the questionnaire show in the most emphatic manner, the conception of death does not awaken in the most of cases a very deep individualistic or self-centred consciousness. The centre of the idea of death and its radiations is outside of what is ordinarily called the self, and essentially altruistic. In dwelling on death (Rubric 11), and also in contemplating suicide, it is the feelings of others which are most frequently in the focus of consciousness, although behind this there is of course the motivation of personal feelings. The age of this dwelling is also significant. The first idea of death in the child (Rubric 9) is, as with early man, the death of others. Our instinctive feelings of self-preservation really do not bring in the idea of death at all, but are hereditarily much deeper and more ancient than this peculiarly human

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<sup>1</sup> Bastian, *op. cit.*, Bd. II, p. 331.

<sup>2</sup> Bastian, *op. cit.*, Bd. II, p. 331, etc.

conception. We save ourselves first by an uncontrollable reflex and its accompanying or discharging fear. The idea of death and its irradiations come later.

The ideas of primitive folk bear the same character. The ghost is feared to a much greater extent than is the idea of death for self. In most of cases, indeed, death is met quite fearlessly, or at least without the ability to realize its meaning. Stanley tells of offering to buy a negro who was penned up and being fed and otherwise indulged, but who was to be killed and eaten some weeks later. The negro, however, refused to go with him, preferring the present good treatment for a short time to working for his living. When the conception of death is first realized, it is generally not primarily in connection with self as such, but in connection with those reactions, part of ourselves of course, which refer to other people.<sup>1</sup> In many early races, immortality was not conceived possible for the mass of the people, but these believed faithfully in the immortality of their kings and rulers, who of course were those who had impressed them most, and who thus really were the occasion of brain arrangements or their psychical equivalents, which were but slowly side-tracked or irradiated.

The disinclination to quit life seems to be the greatest when the deep altruistic tendencies arising from the sexual life are at their strongest. Tables of suicides show that this crime becomes more frequent at and after the grand climacteric. Old men who still desire to live, are those who have preserved the upper irradiations of the reproductive life in love and sympathy for their fellows.<sup>2</sup> As the late Lord Shaftesbury said of himself, the ceasing of the opportunity to do good for others is the principal motive for fearing death in many old people of the best type. Characters of another kind seem to lose their interest in life with advancing age, and have little reluctance to die.

A deep reference to the sexual and reproductive life pervades much of the ideas of ancient people on this subject. A few cases have already been cited where immortality of one part, at least, meant survival in the race. The Indians of California explain atavism by saying that the soul of the ancestor has come back. Phalli were dried and buried with

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<sup>1</sup> The very idea of self may in some cases be largely made up of extra individualistic reactions, or a conception of self may be regarded as a function of others. The fondness of the epistemologists for pointing out the relativity of these conceptions points in this direction (as a matter of origin).

<sup>2</sup> Cf. author's article on "Sex and Art."

mummies in Egypt. Bastian<sup>1</sup> identifies the Roman Lares and genii. The Lares were originally rude images of male and female organs of generation. The genii were of course disembodied souls. Forlong ("Rivers of Faith") shows the identity of ancestor worship with phallicism in its earliest forms. Ancestor worship, as we have seen, is merged in the belief in ghosts, etc., from which Spencer develops religion. Bodies are frequently buried in the same posture in which the embryo is found in the womb. According to the Susus, the spirit sometimes takes up its abode in a grandchild.<sup>2</sup> Frequently a relative receives the soul. With the Romans the son, or failing him the nearest relative, stood over the body of the dying man to receive his last breath. Many tribes hold the baby of a dying mother over her mouth for the same reason. Celibacy was frequently regarded as a crime in reference to the certainty of death.<sup>3</sup> The first inscription of the Egyptian papyri, perhaps the oldest writing in the world, contains the advice to marry early and have a son.<sup>4</sup> The Greeks buried their youth at night, "for so dreadful a calamity was this (the death of youth) accounted that they thought it indecent and even impious to reveal it in the face of the sun."<sup>5</sup> The three hundred Lacedemonians chosen by Leonidas were all of them fathers with sons living.<sup>6</sup> When "the human plant had flowered," death was not regarded as a shame. This may be compared with the experience of H. B., pp. 90f.

The sexual life, which, as we saw underlies and punctuates the other periods of life, is of very great importance for the last. Not only by the social ties which its proper function calls into being, thus developing the higher sexual radiations of love and sympathy, but on the lower ranges of physiology as well, does the adequate discharge at their proper period of these great hereditary emotions tend to produce a healthy and happy old age. The return of the ghost of the sexual life after it should be properly laid, is even more troublesome and injurious than is the reappearance of our friends or enemies. Here, as well as in the face of the immediate observation of death, is the cathartic rather than the repressive method calculated to produce the best effect. When the sexual functions have been denied or insufficiently radiated

<sup>1</sup> *Op. cit.*, Bd. II, p. 330.

<sup>2</sup> Bastian, *op. cit.*, p. 331.

<sup>3</sup> Cf. Renouf, "The Religion of Ancient Egypt," p. 148.

<sup>4</sup> Amelineau, "La Morale Egyptienne." Cf. also Ecclesiastes.

<sup>5</sup> Tegg, "The Last Act," p. 32.

<sup>6</sup> Renouf, *op. cit.*, p. 148.

(and their normal gratification is the easiest and most natural condition of their radiation), there is plenty of evidence to show the danger of a recrudescence in old age of the sexual passion in morbid forms of the most unhealthy type.<sup>1</sup> Many senile exhibitionists, perverts, etc., as well as Clouston's<sup>2</sup> old maid's insanity, come under this rubric.

The feeling of guilt, just the obverse of the demand for justice which is such a strong motive in the longing for immortality, is shown nowhere more frequently than in connection with aberrations of the sexual life. The developmental insanity of pubescence connected with failure of the sexual life, is frequently marked by excessive feeling of guilt and often by fear, sometimes of damnation. Many cases of senile dementia also present this character.<sup>3</sup> With the dropping out of the sexual life and with its failure to lay up treasure for itself in the higher regions of the brain, there may thus be either recrudescence of the lower, or complete loss of all the emotions of love, either generative or regenerative, and their substitution by feelings of guilt and fear.

The slighter phenomena of the grand climacteric, the increase of fears, disposition to starts, flushings, burnings, kleptomania, are significant here. When this period is safely passed, however, it often results in a wider, more intellectual, if not a deeper interest in the race. Many have noticed the number of women at this age who fill lecture halls, conduct meetings, and push causes of every kind.

The history of the idea of immortality as contained in phallicism and other ancient religions, bears the strongest evidence as to the connection of the ideas of sex and death.

To conclude, as biologically death and sex come in together, so in the higher psychical life their irradiations are the most closely associated. Sex and reproduction, first a means of overcoming death, sacrifices in doing so the continuity of individual life, but intensifies it by the whole course of evolution. So in the soul-life, love is greater than death, not mystically, but simply as a matter of fact, while the conception of death serves to intensify the psychical life, and give a foil and sense of earnestness<sup>4</sup> to all our enthusiasms. This great background thought has framed not only the deepest love, but also the greatest productions of art, religion and

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<sup>1</sup> Schopenhauer went so far as to say that pederasty was allowable for old age.

<sup>2</sup> "Mental Diseases."

<sup>3</sup> A number of cases of this kind were observed by the present writer at the clinics of Dr. Meyer of the Worcester Hospital for the Insane.

<sup>4</sup> Cf. Hawthorne's "The Marble Fawn."



philosophy. God and immortality have risen in obedience to the infinite yearnings with which it stirs the soul. Whatever ontological truth may lie behind these ideas, and that is a question which we have not entered upon here, it remains for us to use these great ideas to the full as the psychological functions which we have attempted to show they are, and to bring thus into the here and now of one life-time the best and highest realization of which it is at present capable. In any case the deep life of love, with the care for offspring, and the natural and spiritual continuity or immortality which they ensure, is the tidal wave upon which all these ideas are upborne, and which, showing itself before maturity and lingering often in its highest radiations into age, in its best function and discharge unites into one whole the different periods of life. The principal danger to be avoided, is hardening into a blind fetichism radiations, which are only vital as they recognize the source from which they spring. In the best conditions, however, these radiations help to harmonize the different periods of life. Youth, maturity, old age, are the sub-major, major and minor chords, of which the eternal dominant note is love.

It is impossible for me to close this paper without acknowledging in the warmest way the continued help and sympathy of Pres. G. Stanley Hall in the prosecution of this study, the subject of which was suggested to me in the course of one of his lectures, while his whole treatment of ancient philosophy and Christianity during the present year has been of the greatest service in its elaboration. To Drs. Hodge, Sanford, Burnham and Chamberlain, I am also much indebted for many kind suggestions concerning the literature in their fields. As to the indispensable coöperation of the many friends who have answered the questionnaire, I have already spoken.